

AMERICAN ARTISAN and Hardware Record

620 SOUTH MICHIGAN AVENUE, CHICAGO, JULY 10, 1920.

\$2.00 Per Year.

GENERAL ADVERTISING
JULY 10, 1920
Vol. 80 No. 2

*This smoke pipe
will last as long
as the warm air heater*



EVERLASTING CAST IRON SMOKE PIPE

JUST think what it means to be able to tell your customer that the smoke pipe you put up for him will last as long as his warm air heater.

The average sheet metal smoke pipe burns out in one or two seasons. This means dissatisfaction on your customer's part and dirty and unprofitable work for you in putting in new sheet metal smoke pipe. Do away with this one weak spot in your warm air heater installations.

Use **EVERLASTING CAST IRON SMOKE PIPE**. It costs more but it lasts longer. It is stronger, heavier, and easy to install. It is made in sections and lengths to fit any distance.

EVERLASTING CAST IRON SMOKE PIPE comes in two-foot, one-foot and six-inch sections. Elbows are furnished in 45 degree and 90 degree angles, in eight-inch, nine-inch and ten-inch sizes.

EVERLASTING CAST IRON SMOKE PIPE in the long run will prove the most economical for your customers and the most profitable for you to sell.

Our latest catalog lists a complete line of Registers, Smoke Pipe, Fittings and warm air heating plant accessories.

WRITE TODAY FOR THIS CATALOG AND PRICES

WATERLOO REGISTER COMPANY

137 RATH STREET

WATERLOO, IOWA

CENTRAL HEATING SUPPLY CO., 1125-29 West 37th Street, CHICAGO
OMAHA STOVE REPAIR WORKS, OMAHA, NEBRASKA

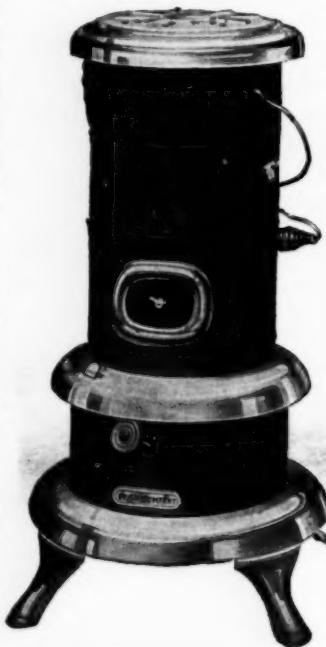


EVERLASTING CAST
IRON SMOKE PIPE

is being used by
thousands of warm
air heater installers
throughout the
country. It will pay
you to begin using
it now. Write to
day, let us tell you
more about it.

“QUICK COMFORT” OIL HEATERS are ready for shipment now

If you have not placed your order for fall delivery do so at once



“QUICK COMFORT” OIL HEATERS

have reinforced flint bottoms, use extra heavy wicks which cannot stick and the two piece smokeless device insures an extremely hot flame.

For more particulars write to

QUICK MEAL STOVE CO.
DIVISION of AMERICAN STOVE CO.
825 Chouteau Ave. ST. LOUIS



MAHONING HEATING SYSTEMS

**“The Mahoning Type D
Is the Best Furnace I’ve
Ever Seen”**

“The Mahoning Type D is the best furnace I’ve ever seen,” a man wrote us not long ago.

This is the comment we are hearing from dealers and consumers in all parts of the country. Quality tells every time. That’s why the Mahoning commands an exalted position in the furnace world.

The Mahoning Type D is the heater with the “horseshoe” or return flue radiator. Do not confuse it with the ordinary furnace of this type. It is in a class by itself.



A limited amount of territory is still available. Good dealers now have an opportunity to “cash-in” on the Mahoning demand. Write for our special proposition today.

The Mahoning Foundry Co.
622 Poland Ave., Youngstown, Ohio
A Mammoth Plant With a Mammoth Production



WRIGHT PIPELESS HEATERS

ESTABLISHED 1880

Representative of
The Hardware, Stove,
Sheet Metal, and Warm
Air Heating and Ventilating
Interests

AMERICAN ARTISAN and Hardware Record

PUBLISHED EVERY SATURDAY BY ESTATE OF DANIEL STERN

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CHICAGO, JULY 10, 1920.

\$2.00 Per Year.

Peaches will cost more next January than they do today. It will be quite a comfort to

Canning Outfits. the housewife to have a supply on hand when the snow is on the ground. In a few weeks peaches and other fruit will be plentiful. The canning season will then be in full swing. There is only one trouble in sight, and that is the high price of sugar. The hardware dealer need not let that trouble interfere with his selling outfits for home canning. Fortunately he can get plenty of instructions from the U. S. Department of Agriculture to teach his customers to do their canning with much less sugar. This is a strong selling argument which he should use to the best advantage in his talks to his customers across the counter as well as in his store's advertisements.

♦ ♦ ♦ ♦ ♦

It would be safe to bet that four out of five men who pass your store like to go fishing.

At least three out of the four

Catch the Fisherman. would take delight in having the best kind of fishing tackle.

Two out of the three would buy their supplies from you if you made the right kind of an effort to get their trade. That does not mean that you would have to tie up a lot of your money in fancy bait and gold-plated reels. It is easy enough to find out the best grades of fishing tackle and to sell them. Cheap goods won't help your store or your customer. Sell him the best. Then there won't be any chance of his coming back to you with a kick about a reel that does not reel or a rod which is hard to take apart or put together. There is profit in selling fishing tackle.

First, however, you must catch the fisherman. Get him interested, for example, by putting a bulletin in your window telling where the fish are biting or giving news of a good catch in some nearby fishing grounds.

Make your window display of fishing tackle help you catch the fisherman's trade. Connect it up with your local newspaper advertising. Don't put too many different articles at the same time in your exhibit of fishing tackle. If you are an expert yourself, however, put in the window a duplicate of the outfit which you use.

Change the display every few days. Find out from your friends what they use in fishing and in each succeeding window display put a different outfit corresponding to the varying equipment of your friends. In that way, you will cover a general run of outfits and are sure to strike a good selling average.

♦ ♦ ♦ ♦ ♦

Exaggeration weakens confidence. No business can continue to prosper without confidence. Indeed, our entire

Try Not to Exaggerate. social structure is founded on confidence. Subconsciously, we

put unquestioning trust in everyone with whom we deal in the course of the day. We would probably starve to death if we did not have faith in the reliability of the people who prepare our foods. If we were to suspect poison in every can of peaches, every pound of beefsteak, every peck of potatoes, every loaf of bread, or every bottle of milk, we would not have time to earn a living. We would have to spend most of our waking hours in analyzing these various foods in order to make sure that they were free from deadly germs or arsenic or some other fatal ingredient. When we ride in a street car, we take it for granted that the motorman will not abuse our confidence in his skill, that he will not wreck the car with deliberate intent.

We have no way of knowing in advance whether or not the elevator conductor in an office building has in mind a purpose of dropping us down the elevator shaft ten or fifteen stories to our death. We enter the lift with-

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AND
HARDWARE RECORD
620 South Michigan Avenue
Chicago, Illinois

out giving a millionth part of a fraction of a second's thought to such a possibility. We cross streets crowded with automobile traffic and when the policeman's whistle halts the stream of cars, we have confidence in the law and the power of the law to make it safe for us to pass peacefully in front of powerful engines which could crush us as easily as a steam trip hammer could smash a paper-shell pecan nut. Yet, a mere touch would suffice to start all those waiting motor trucks and pleasure cars in a dash forward which would kill dozens of us at the crossing. Confidence, then, is at the base of all our social and industrial relations.

Notwithstanding the overwhelming influence of confidence in our lives there are individual cases in which it may be weakened or destroyed. Confidence is at once the most substantial and the most fragile of all factors. In the business world confidence builds vast fortunes and destroys years of accumulation. The merchant who would prosper must first of all gain the confidence of his customer. It is, therefore, highly important that he train himself in the appreciation of the things which produce confidence. For that purpose, it is essential that he avoid misstatements and exaggeration—particularly in his advertisements.

When he says, for example, that a washing machine which he is advertising or a vacuum cleaner or a hammer is the best in the world, that it is unique or marvelous or incomparable, he is using superlatives which weaken confidence of prospective customers. In order truthfully to say that a thing is the best in the world one would have to examine, compare, and analyze every other thing of that kind in the entire world. It would take probably a hundred years to do so and by that time the thing itself would probably be obsolete and the advertiser himself a mere bag of bones.

Enthusiasm with regard to the commodities which the retailer sells is desirable. But the enthusiasm must never be permitted to get out of bounds and to express itself in misleading adjectives. Simple, plain statements instinctively appeal to our basic confidence. A noteworthy example of this is the advertisement of Blue Valley Butter. The wording is: "Blue Valley Butter is Good Butter." Such a statement sounds plausible. People are inclined at once to say that it must be

good butter. When they try it they find it is good butter. Their confidence is strengthened. If the advertisement, on the contrary, stated that Blue Valley Butter has no equal, that it is the best in the world, that its flavor is unsurpassed, etc., prospective customers would instinctively discount the exaggeration and say to themselves: "These people are claiming too much for their product."

The same holds true of everything that we use or eat or wear. The best way to sell a thing is to tell the truth about it. Truth begets confidence. More sales are made and more customers added to the permanent clientele of the store by straightforward, honest speech in merchandising, whether across the counter or through an advertisement, than by highly colored claims and exaggerated statements.

* * * * *

This country is too big for the apprenticeship system. We have outgrown it. We

Give Aid to Trade Schools. need hundreds of trained workers where the people of fifty years ago needed only tens of skilled mechanics. The trade schools are replacing the old methods of apprenticeship training. In the days of Lyman Beecher, it was said that an anxious mother asked him, "What shall I do with my boy?" He answered: "Have him smash a jeweler's window, steal a fifty dollar watch, and he will then be sentenced to Elmira reformatory, the only place in the state of New York where the boy can be taught a trade."

Fortunately for the future of industry such heroic measures are no longer necessary to get into a trade school. We have not only trade schools where excellent instruction is given, but several really practical correspondence schools for ambitious mechanics which deserve the moral support of sheet metal contractors.

Good material requires good workmanship. If the sheet metal industry is to hold its own against competition from other trades, it must develop within its ranks skilled mechanics. That is the reason why sheet metal contractors' associations throughout the country should emulate the example of the Wisconsin Association and work together for the establishment of courses of training in sheet metal work in trade schools already operating in their respective territories.

RANDOM NOTES AND SKETCHES.

By Sidney Arnold.

Salesmanship takes into account always the human motives, says my friend A. M. Doll of the Lovell Manufacturing Company, Erie, Pennsylvania. Here is a practical demonstration which he quotes:

The agent for the Useless Dingus he was selling was a smart man. He rang the doorbell and a maid opened the door.

"Good morning," smiled the agent. "I am trying to find a married lady whose name I can't remember just now. I think this is her home. She is a woman easily described. Perhaps you know her. She is a handsome woman, with a perfect complexion, beautiful hair and teeth, lovely eyes and an ideal figure. I thought—"

"Mary!" called a voice from the top of the stairs, "tell the gentleman I will be right down!"

* * *

Provincialism is not wholly rooted out of our habits of thought, remarks my friend E. B. Langenberg of Haynes-Langenberg Manufacturing Company, St. Louis, Missouri. In proof of the statement he tells the story of two men who met at a convention.

"Where are you from?" inquired the New Yorker. "Los Angeles," said the man from California.

"Oh, I see," exclaimed the Empire State inhabitant.

"So you're from the West. Well, I've been West some myself. Now last year I was out as far as Cleveland and stopped a while in Pittsburgh. I was all around the West."

"Is that so?" said the man from Los Angeles, with a great show of interest. "Well, I was up East myself not so very long ago. I was in Denver and Salt Lake and all around. It's strange we didn't meet."

* * *

A modern illustration of the old adage, "chickens come home to roost," is furnished in the subjoined story by my friend Tom Usher of Russell and Erwin Manufacturing Company, Chicago, Illinois:

"You look like an idiot," said a disgusted father to his son, who had just returned from college. "More and more like a conceited, harebrained, helpless idiot every year!"

Just then an acquaintance of the old gentleman entered the office and saw the youth.

"Hello, Charlie! Back, eh?" exclaimed the visitor. "You're looking more and more like your father every year."

"Yes," said Charlie, "that's what the governor's just been telling me!"

* * *

Here is a good one sent me by my friend George W. Diener of G. W. Diener Manufacturing Company, Chicago, Illinois:

Two dear old ladies were discussing husbands. Said the first: "I have been married three times. Each of my husbands is dead though. They were all cremated."

Her friend was a dear old maiden lady. She listened attentively to her friend, and when she had concluded the sad story of her life, she said: "How

wonderful are the ways of Providence. Here I've lived all these years and have never been able to get one husband, and you've had husbands to burn."

* * *

A good way to get rid of that scowl is to read this bit of humor related to me by my friend Harvey Manny, President of the Manny Heating Supply Company, Chicago, Illinois:

"Twas Pat's first football match. He dashed here and there, running everywhere and in every one's way. While in the midst of the battle, he got a nasty kick in the head, rendering him unconscious.

"Who—who kicked me?" Pat spluttered, upon "coming to."

"It's all right," replied the referee, "it was a foul."

"A foul! Be jabers," Pat exploded. "What if it had been a mule?"

* * *

Here is a laughable story which you may not have heard before. It was relayed to me by my friend, C. E. Glessner of the Excelsior Steel Furnace Company, Chicago, Illinois:

A British consular agent in the jungles of Africa wired headquarters:

"Can not stay here any longer—too many wolves, tigers, and lions."

Headquarters wired back:

"There are no wolves in the jungle."

To which he replied:

"Referring to previous despatch, cancel wolves."

* * *

My friend E. C. Fox of the Independent Register and Manufacturing Company, Cleveland, Ohio, contributes this amusing incident to my collection:

"Witness," asked the attorney for the defense, who was trying to prove the temporary insanity of the prisoner, "was it this man's habit to talk to himself when alone?"

"Jest at this time," came the answer. "I don't recollect ever bein' with him when he was alone."

* * *

An extreme case of profiteering is supplied as follows by my friend W. J. Burton of W. J. Burton Company, Detroit, Michigan:

Mabel—"Did you return Harold's ring when you broke your engagement?" Alice—"No, I paid him what it cost him. Diamonds have gone up 100 per cent since he bought it."

* * *

Most of us like to indulge in pictures of the future. It pleases us to build images of perfect peace in some far-off time. I am reprinting here some lines from the Los Angeles Express containing such a picture. I like it. I have one objection to it, however, and that is that the verses are all in the future tense. Let's get together and put them in the present tense. Here's a good chance to do it now.

Mighty Good.

A mighty good old world 'twill be,
When wars and troubles cease;
When blooms entwine the frowning guns,
And all the birds sing peace;
When right shall triumph over all,
And every day shall see
Its little deed of kindness done
In love and sympathy.

UP TO THE MINUTE NEWS SIFTINGS

The Quakertown Stove Works plans a warehouse, two stories, 44x150 feet, to cost \$75,000, at Quakertown, Pennsylvania.

TELLS WHAT A LONDON SUBURB IS DOING TO SOLVE THE HOUSING PROBLEM FOR WORKERS.

Written for AMERICAN ARTISAN AND HARDWARE RECORD.
By L. Dixon, London, England.

The Housing difficulty is as acute throughout England as elsewhere. But that cheap land, at the same time, comfortable buildings can be erected, "homes fit for heroes to live in," is evidenced by the experiment now being tried and proving, so far, entirely successful, at Southgate, a suburb of north London. Here, will and cooperation on the part of the workers, added to the right use of brain-power, are uniting to overcome this particular menace to civilization, for so it is —this utter lack of accommodation that prevails everywhere, go where one will, into town and country alike. The result is that more convenient houses are being erected in that district for the price of £690 to £750, houses far better too than others being put up elsewhere in London at £1,200.

Not only is the Housing Problem in this case in a fair way towards solution, but the Labor Problem, likewise, is being treated in a fair and human-like manner. In this particular district, houses are being built without the services of a contractor being requisitioned, the contractor's profits thus being eliminated. Up to the present, three houses have been completed at a cost of £690 each, including land roads and sewers. These are let to ex-service men and their families. Five others are nearly ready at a cost of £720 each, others are on a fair way toward erection and will cost £750, which price will be the maximum, taking into full account the rise in the cost of labor.

Had these houses been undertaken by contractors, they would have been priced at £1,100 to £1,200 each. Here, in Southgate, the only contracts entered into are for labor. These contracts are given to the bricklayers, carpenters, etc., who have agreed to pay their mates at the Trades-Union rates with an additional penny per hour.

The consequence is that these men work with a will—there is none of the "300 bricks-an-hour-men" to be seen on this job—having the heartening feeling beside that there is no profiteering value being placed upon their labor. All the profits go straightaway into the pockets of the men themselves and not to any distant firm in the heart of the Metropolis. The general atmosphere of the laborer is healthier, happier—in short, more satisfactory in every way than elsewhere and they work with the knowledge that their work is real good work, that it results in the benefit, both as re-

gards human and financial, of the community, national and local alike.

Another point, and this is of importance: At the head of the District Council are three keen, experienced men of business who cooperate in making this scheme a success and who are to be complimented on their energy and determination. They set to work with a will and by dint of looking about in the right direction and putting their mind to it, have succeeded in being able to buy building material comparatively cheaply and without the long delays invariably associated with Government official departments.

Concrete blocks, made of clinker from the municipal dust-destlector, are being used and this material naturally still further reduces the cost. The £690 houses that are now tenanted and those at £720 nearly completed, to which I have alluded, are built of brick, with rough-cast facing.

As to accommodation. The houses are all double-fronted; each has a garden of the dimensions, 66 feet by 33 feet. The rooms consist of: A living-room, a parlor, three bedrooms, a large scullery and a bathroom. Good grates are fitted to the rooms, the fittings to the bath-rooms are excellent, there is no lack of cupboard accommodation, a hot cupboard likewise, and even picture-rails have not been left out.

Southgate's example is truly inspiring and worthy of close attention as well as imitation in other townships and country villages in other parts of the world.

PAYS ATTENTION TO ALL DETAILS.

More than in any other thing, manufacturers and others who make use of stove or heater patterns demand exactness in details. The reason being that a mistake in any single portion of a pattern entails a great amount of subsequent labor. Therefore, pains should be taken in choosing the company to make one's patterns. Because of its long experience and modern equipment, many who know will point to The Cleveland Castings Pattern Company, Cleveland, Ohio, as a reliable manufacturer of stove and heating patterns. Indeed, this company values carefulness in every detail of its work as an asset to its business. The patterns produced by The Cleveland Castings Pattern Company, Cleveland, Ohio, show evidence of skilled workmanship. In every particular the patterns turned out by this company are well-made. The materials used are of the highest quality attainable for this kind of work. Service is prompt. Where specifications of unusual nature are furnished, they are followed to the letter, and the work is completed exactly in accordance with instructions. Manufacturers or others who need stove or warm air heater patterns can obtain desirable information pertaining to these products by writing to The Cleveland Castings Pattern Company, Cleveland, Ohio.

ADVERTISING DOES NOT INCREASE THE COST OF COMMODITIES.

As an economic force, advertising gives birth to new wants and so creates an economic demand for more goods, thus tending to increase the demand for this labor, says Joseph French Johnson, Dean of the New York University School of Commerce, Accounts and Finance. Economists commonly say that the manufacturer creates "form utilities," and that the railroads add a "place utility" to goods. No matter how wonderful your invention or how fine the quality of your goods, people will not buy unless they know what you have got. Therefore, you simply must advertise.

It is entirely wrong to look upon the expense of advertising as one of the costs which add to the price. The truth is quite the contrary. Without advertising large scale production is absolutely impossible, and large scale production is the sine qua non of low prices. Someone has estimated that the business men of the United States in normal times before the great war were spending fully one billion dollars a year in advertising. A mushroom economist would immediately jump to the conclusion that the poor ultimate consumer footed this enormous bill. If we could get all the facts, however, I have no doubt we could prove that this billion dollar expenditure for advertising reduced prices to such an extent that the American people at the end of the year were more than a billion dollars better off than they would have been had some fake economic tsar begun the new year with an edict against advertising.

Furthermore, advertising sees to it that people shall get goods of the best quality. It lifts the market standards. People want the best, and when with the aid of advertising they have found out what is best, the man who makes it has their almost unanimous patronage, and the man who makes the inferior articles must either go out of business, or improve the quality of his goods. Advertising puts no royal crown on the head of a humbug. No man succeeds through advertising who would not succeed without advertising. Advertising merely makes his success swifter, bigger, more certain.

Advertising is absolutely essential to the successful distribution of goods. Without its aid a manufacturer is at the mercy of wholesalers and retailers, for he has not the ear of the consumer. But with advertising as his agent, he trademarks his goods and makes them familiar household words in the homes of all classes and consumers, broadens his markets and prospers, utterly indifferent to the frantic and mendacious tricks and devices of unworthy competitors. So it has come to pass that "an article of merchandise without a trademark is like a mule—without pride of ancestry or hope of prosperity."

Advertising has taken down the screens from the windows of business, of directors' rooms, and even of departments of state. Business is now done in the open and will be more and more—and to advertising the credit is due, for it has shown the way. It is the great servant of truth.

And it is also the hand-maiden of democracy. So long as the world was ruled by monarchs, there was

no need of advertising. The monarch had only to say "Do this" and it was done; or "Serve such and such dishes at my table," and every loyal subject served the same. But democracy substitutes the rule of popular intelligence for the rule of the single intelligence. Men can no longer be ordered; they must be persuaded. Nothing great will ever be done in the world again except through the power of public opinion. And advertising shapes public opinion.

We think we have seen great development in advertising. What we have seen is nothing in comparison with what we shall see. Advertising is hardly out of its swaddling clothes. It will have its childhood diseases, its growing pains. It will be picked on by jealous rivals. We shall have our epidemic of laws to tax advertising on the ground that some advertising is wasteful. This would be as wise in the words of Governor Calvin Coolidge of Massachusetts, as to "Abolish writing in order to prevent forgery." But we shall come through all these tribulations to full grown manhood if we hold our heads high and keep the faith. Proclaiming the good gospel of advertising not merely as an economic force, but as the prophet of progress, and the moulder of public opinion, which is the strength of democracy and the hope of our civilization.

PRODUCES BOLTS WITH ACCURACY.

Accuracy in every detail in the manufacture of screw machine products is the claim of the Corbin



Stove Bolt, Made by the Corbin Screw Corporation, New Britain, Connecticut.

Screw Corporation, New Britain, Connecticut, makers of the stove bolt shown in the accompanying illustration. This bolt is produced for use on stoves and similar products. The metal used in its manufacture is of a grade proved to be of the best for stove bolts, declare the manufacturers. Many sizes of the bolts of the type illustrated herewith are made by this corporation. All of them are made with the precision which characterizes the product depicted in the accompanying illustration. The Corbin Screw Corporation are also the manufacturers of an extensive line of screw machine products. Besides screw machine products, this company makes steel furnace chain, steel register chain, etc. Detailed information on any phase of the articles manufactured by the Corbin Screw Corporation, New Britain, Connecticut, can be obtained by writing direct to them.

Are you on friendly terms with your competitors? It is the only sane ground to take.

Things that are too much for one man to handle can often be turned into a source of profit and pleasure by co-operation and organization.

Just as sure as you allow any customer to get the idea that you feel a little bit above him, just so sure you may be that you will lose that customer.

THE WEEK'S HARDWARE RECORD

Of Interest to Manufacturer, Jobber and Retailer

AMERICAN ARTISAN AND HARDWARE RECORD
is the only publication containing western hardware and metal prices corrected weekly. You will find these on pages 40 to 45 inclusive.

Plans have been completed for a power house for the Hoover Suction Sweeper Company at Canton, Ohio.

The Therell Hardware Company has increased its capital stock from \$50,000 to \$100,000, at Beaumont, Texas.

The Milwaukee Woven Wire Company plans a factory building, two stories, 60x120 feet, at Milwaukee, Wisconsin, to cost \$25,000.

The Enterprise Manufacturing Company plans a boiler and engine house, one story, 50x73 feet, to cost \$28,000, at Philadelphia, Pennsylvania.

The Campbell Wire Specialty Works is expected to start work soon on a factory building in South Bend, Indiana, one story, 66x165 feet, to cost \$60,000.

Plans are being made for a plant at Turners Falls, Massachusetts, for the Woods Process Corporation, manufacturers of axes, at Montague, Massachusetts.

The American Specialties Company, maker of hardware, has let the contract for a one story, 60x102 feet, factory to cost \$40,000 at Bridgeport, Connecticut.

The City Hardware Company has been incorporated with a capital of \$15,000, by John H. Crain, John J. Dowd, and William A. Doyle, at Leomister, Massachusetts.

Robinson Equipment Company has been incorporated for \$150,000 to manufacture tools, machines, hardware, etc., at Boston, Massachusetts. Frank S. Parsons is president.

The Spafford Machine Screw Works, Incorporated, has been organized with a capital of \$330,000, by F. L. Spafford, 516 Asylum Street, and others, at Hartford, Connecticut.

The New York Wire and Screen Company, of Jersey City, New Jersey, has been incorporated with a capital of \$100,000, by S. A. Black, A. F. McCabe and J. R. Turner.

The Eastland Hardware Company, Eastland, Texas, has been incorporated with a capital stock of \$120,000 by Joseph Burkett and Thomas Harrell, to manufacture hardware specialties.

Joseph Maresca and Sons have been incorporated to manufacture hardware at Brooklyn, New York, with a capital of \$25,000, by J. and R. and F. V. Maresca, 1067 Coney Island Avenue.

The National Cutlery Company has been incorporated to make cutlery and hardware with \$50,000 capital by Patrick Concannon, D. Concannon and Richard Dorgan, at New Haven, Connecticut.

Welch Hardware Company, of Welch, West Virginia, has been incorporated with a capital stock of \$50,000. Incorporators are B. O. Swope, John C. Summers, John M. Turner, Andrew F. Leckie and W. B. Lovett, all of Welch.

EMPLOYEES OF HARDWARE FIRM HAVE A GOOD TIME CELEBRATING ITS FIFTIETH ANNIVERSARY.

When John H. Graham fifty years ago established the hardware jobbing business which bears his name, he built it upon the soundest of foundations, namely, that of good fellowship. He believed that no enterprise could be made permanent which did not give first consideration to the human element in business.

Half a century of successful development attests the wisdom of his principles. His sons continue to carry forward the ideas which he wove into the firm of John H. Graham and Company, New York City.

Therefore, in fitting celebration of the fiftieth anniversary of the business established by their father, they entertained all their employees at an excursion and picnic up the Hudson River to Forest View Park July 1, 1920.

The firm chartered a steamboat for the occasion and hired an orchestra of eight pieces to discourse pleasant music to those on board. A bountiful luncheon was provided and elaborate prizes were given to the winners in the various games, which helped to brighten the day at Forest View Park.

Appropriate talks were made by various men connected with the firm. W. A. Graham gave the instructive sketch of his father's career. George A. Graham spoke on the growth of the business, both domestic and foreign. Colonel W. J. Lockwood of Chicago and others connected with the firm made short speeches on topics of interest to the employees.

TELLS HOW TO DECIDE QUESTION OF WHERE TO GO ON VACATION.

"Where shall I go on my vacation trip?" is the question of the hour. But those who know the charms of the Great Lakes have already made plans for their annual pilgrimage to America's Wonderland. Lake Erie with its incomparable fleet of magnificent passenger vessels is especially attractive to travelers, and plying its waters you will find some of the largest and most palatial steamers.

Of these the great ship "Seeandbee," operating daily between Cleveland and Buffalo, is undoubtedly the most popular. The "Seeandbee" is the largest and most costly steamer on inland waters of the world, and her immense proportions and luxurious

appointments prompt passengers to call her "The Floating Hotel."

The traveler finds rest and comfort via this lake route. By boarding the steamer at Cleveland or Buffalo at 9:00 p. m. (Eastern Standard Time) he may break the monotony of his all-rail journey, enjoy a night of refreshing sleep and reach destination the following morning at 7:30.

**SUCCESS IS OPEN TO ALL WHO KNOW ITS
BASIC PRINCIPLES AND CAREFULLY
FOLLOW THEM.**

The average man who looks over the successful enterprise of some individual is prone mentally to question the wherefore of the successful man. What is the secret of big growth in business—the splendid success that attends the way and crowns the efforts of exceptional men and women—for women nowadays are to be taken into account when we tell the story of modern business success? How does it all come about—this splendid prosperity? These are among the questions which run through his mind.

Is he prosperous simply because it was decreed, from old, that he should succeed where others fail?

There is no doubt such a thing as luck. But the presence or the absence of luck doesn't make one successful or unsuccessful. And the proof of it lies in the fact that some people fail in spite of the fact that they are oftentimes lucky, while other people battle up to success through disaster, limitation and difficulties that might well discourage any but the most resolute and resourceful of mortals.

That there is anything secret in successful conduct of business is unfounded. How could there be with prying eyes and analytical minds everywhere? The white light of publicity beats fiercely upon the modern business man. His ways are known.

When a man achieves advantages in any particular endeavor, his competitors delve deeply into the reasons for his advancement. They study the man and his methods. His store is visited by bright, discerning representatives of other firms, and everything that goes on in his store is reported in detail, gone over critically, and appraised from the point of view of those who buy and those who sell.

How could the man hide anything, although he tried ever so hard? The displays are in the windows and the goods are on the shelves. They speak for themselves. The salesmanship and service and newspaper advertising—and everything that combines to produce a modern retail establishment are matters that can be analyzed and studied in detail.

Success in business can not be a secret. The laws and principles of business are available for anybody and everybody who has the capacity to master them.

Merely knowing them is useless. They must be followed to the minutest detail. If you secretly doubt that there is any such thing, and blunder along in your own way, you will travel far and endure the heat and burden of many a day, but you'll never arrive in the city of Big Business.

No one will deny that men have accidentally found pockets of gold nuggets and occasional fortunes in old

rusty coffee pots, but these things are so rare there isn't much likelihood of their happening with you or with me.

Sudden riches, get-rich-quick opportunities and other mushroom schemes are all well enough for fiction, but such highly improbable occurrences do not happen in business. He who discovers the laws and principles of business, and then calls upon his courage to obey them even when there is a strong temptation to depart therefrom for the sake of immediate gain, is going to succeed. He who doesn't believe or care anything about such laws is going to fail.

MECHANICS REQUIRE GOOD MEASURES.

A good measure or rule to a mechanic who uses one often becomes an indispensable adjunct. Such an article is carried around at all times in the pocket. Also, when the mechanic comes to purchase a new one, realizing its importance to him, he will take great pains to be sure he gets a measure or rule of high quality—one that will give service and last



"Challenge" Steel Tape 50 Feet,
Made by the Lufkin Rule Company,
Saginaw, Michigan.

for a long time. The hardware dealer in order to sell these products to such men must handle the best. It is with the knowledge of the severe usage that steel tape measures are put to that the Lufkin Rule Company, Saginaw, Michigan, manufactures its "Challenge" Steel Tapes., shown in the accompanying illustration. The *Instantaneous* readings of which the figures on this tape are capable add to its usefulness. It is claimed that the Lufkin Rule Company, is the originator of the *Instantaneous* readings of the figures. The metal lined hard leather case binding the "Challenge" Steel Tape give it strength. The folding flush handle is a detail of convenience. It is opened by pressing a pin on the opposite side. The nickel plated trimmings are neat in appearance. The tape itself is made of a high grade of steel. Being embossed in white letters, the figures and fractions are easily read. Measurements are guaranteed to be accurate. Besides the tape shown in the accompanying illustration, the Lufkin Rule Company manufactures a wide variety of tapes. In fact, it makes a tape for almost every conceivable use. Furthermore, this company, manufactures an excellent line of rules. Dealers should write to the Lufkin Rule Company, Saginaw, Michigan, and ask for the Lufkin Catalogue which depicts its complete line of measuring tapes and rules.

ARRANGE YOUR GOODS TO SELL THEM.

The importance of store arrangement and the display of goods can not be over-emphasized. It may even be said that it is the making of many stores today. The really successful stores depend largely on systems that make selection of goods easier for the prospective customer.

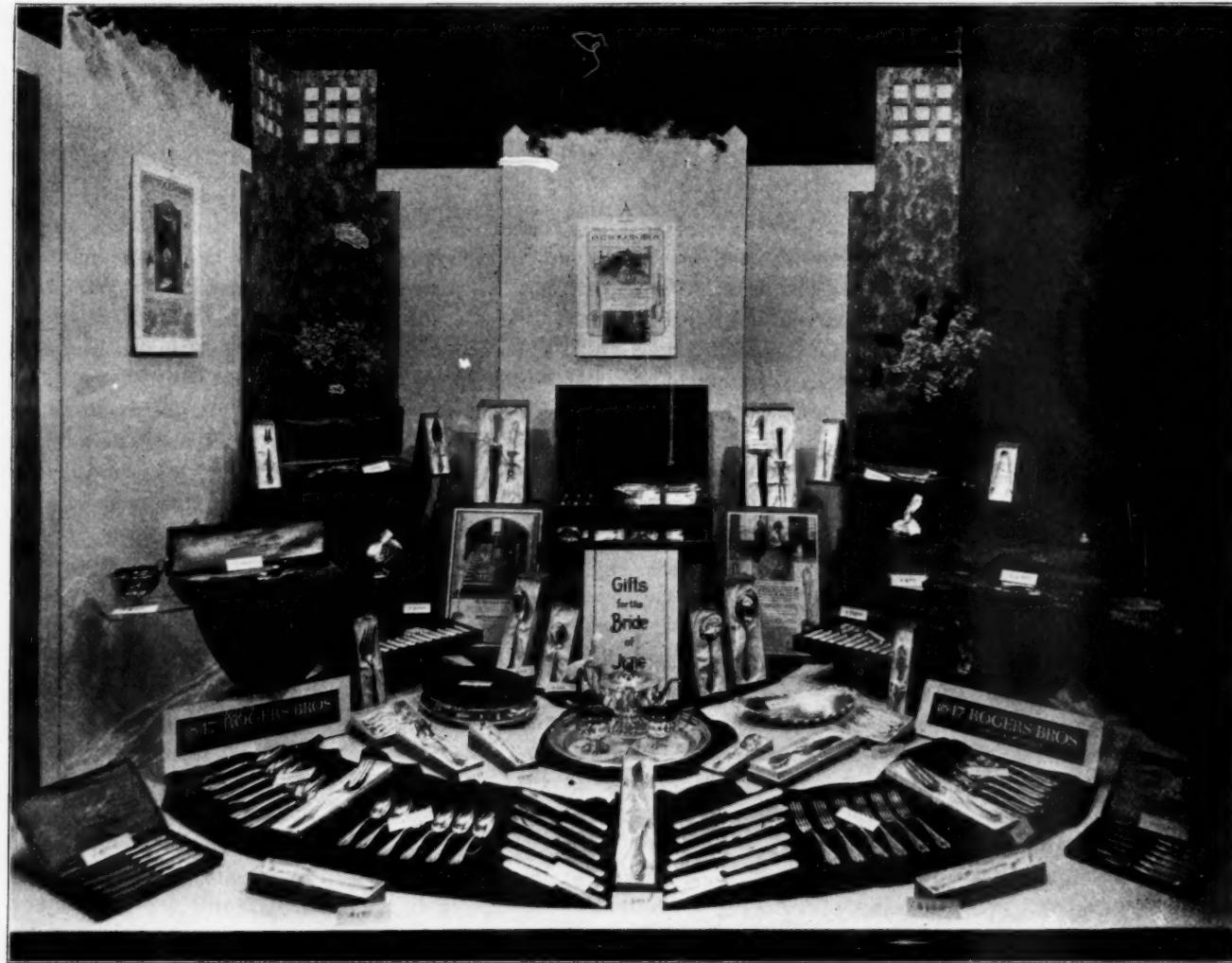
EXHIBITS IN AMERICAN ARTISAN WINDOW DISPLAY CONTEST

TASTEFULLY DESIGNED BACKGROUND INTENSIFIES ATTRACTIVENESS OF WINDOW DISPLAY.

The first requisite of a window display is contrast. We judge only by comparison. It is an easy matter to make this plain. Suppose, for example, that every-

flower is covered with a black cloth. Black against black is invisible.

No one in the audience can see the assistant removing the black cloth from the concealed flower. When the black cloth is removed, the flower appears. It is visible to the audience because it is of a different color from the black of the background and attendant. In



Window Display of Cutlery Arranged by Charles Byford for Mills Hardware Company, 95 King Street, East, Hamilton, Ontario, Canada, Awarded Honorable Mention in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition.

thing in a window exhibit were pure white. The eye would then be unable to distinguish the various objects except by extraordinary efforts. White against white is practically invisible. Some of the most startling feats of magic on the stage are performed by removing means of contrast.

Take, for instance, the mysterious act by which the prestidigitator makes a flower pot with a rose in full bloom suddenly appear on a table in the center of the stage. He has an attendant dressed all in black with a black mask coming down well over the forehead in order to hide any reflection of light from the eyes. The back of the stage is hung in black. The

other words, it is brought into the field of vision by the operation of contrast.

In the making of a window display it is important to keep in mind this basic fact of contrast. Indeed, it is necessary to intensify the effect of comparison in order to overcome the attraction of other contrasts. The passer-by receives countless appeals to his senses along a street lined with show windows. Naturally, he will pay more attention to the display which produces the sharpest impression upon him.

Therefore, in planning a window exhibit of commodities, it is advisable to take into consideration two things, namely, distinctness of contrast and the aver-

age needs of customers. In this respect the hardware store has a strong advantage. Tools and household utensils are articles of daily necessity. Moreover, they appeal to an old instinct of human nature. We all have in more or less degree the building instinct—the instinct for fashioning things and building. In addition to appealing to current needs, therefore, a hardware widow display can easily be made to stir the desire of the passer-by for possession, which is intimately associated with the tool using instinct.

In order to make efficient use of the law of contrast with a view to sales, it is well to spend much thought and study upon appropriate backgrounds. That this has been done intelligently and profitably by Charles Byford of the Mills Hardware Company, 95 King Street East, Hamilton, Ontario, Canada, is plainly evident in the window display of cutlery shown in the accompanying illustration. This display received honorable mention in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition.

Little or no effort is required to perceive the different articles in the exhibit. They are distinctive not only in their groupings but as separate articles. The arrangement is such that the cutlery is presented without any suggestion of confusion or superfluity. The articles are logically connected. The background gives precisely the right contrast and subtly conveys the idea of service, utility, and beauty.

Mr. Byford, who designed this window display for the Mills Hardware Company of Hamilton, Ontario, Canada, describes its arrangement as follows:

"The background in this display is made entirely of wall board. The end pieces are covered with onyx marble paper, the center panel painted green and the wings cream, which make a pleasing contrast.

"The floor of the window was also covered with wall board, painted in eight inch squares cream and green, to match the background. The wall pockets and knife display boards were made of wall board and finished in the same color as the background.

"Black velvet was used to drape the pedestals and also a portion of the floor.

"Practically everything in cutlery was shown in this display and price tickets were freely used.

"This display was arranged in July, considered by many to be a quiet month, but in checking up the sales for the two weeks that this display was in, it showed that over \$400 worth of cutlery had been sold.

"It is remarkable, too, that the sales for the second week were nearly twice that of the first week, which proves that it is sometimes profitable to leave a display in longer than a week.

"The old saying that 'Goods well displayed are half sold' was amply proved in this display.

"The blind on the left was drawn to prevent reflection."

It scarcely needs to be said that this window display was not merely artistic. A hardware show window is not primarily intended for purely esthetic purposes. Its function is to sell goods. But it may profitably be decorated with esthetic intent as a medium of appeal to the passer-by.

The window display under discussion proves the value of artistry in merchandizing by the increased

volume of sales of cutlery, directly traceable to its influence.

PLACES STRESS ON EDUCATION.

Education is the foundation of a republic, declares F. Baackes, vice-president and general sales agent American Steel and Wire Company, Chicago, Illinois. Without it, citizens are unable to fulfill the duty of being sovereigns. It is all right to say that every man is a king—but kingship carries with it tremendous responsibility. Every American citizen, therefore, must be as wise as a king. And the education of kings begins with earliest youth. The fundamentals of life can be taught only through this period.

As experience and contact with the wisest of the world is the most liberal form of education, so is it self-evident that the great bulk of our rising generation is mentally fed by such contact. If that contact is withheld, we mentally starve the future citizen and lay the foundation for national trouble.

In the cities, such contact may readily be obtained. In the outlying districts it may be different. If very remote the opportunities of early youth are meagre indeed. Here is where darkness lies. The nation's life blood of wise intelligence is abnormally flowed to the big centers and abnormally withheld from the remote sections.

The remedy lies in balancing the two. It is quite possible to extend the circulation to the remotest parts through the medium of transportation. The cities long to float to the remote country parts—the remote parts long to float to the cities. The great east and the broad west long to exchange experiences, and it is the only way to breed contentment in one's native vicinity.

We have outgrown our railroads. The trolley roads brought us nearer. The real binder of a great country is the system of reinforced concrete highways that brings the enlightenment of the whole world to doorsteps in the remotest corners of a township. It makes the greatest single element in upbuilding a state and creates a united nation.

DISPLAY WINDOW IS VALUABLE.

The most advanced stores of today are charging a fixed rent for their show windows, this being paid by the department occupying the window each day. The total amount of these window rentals is deducted from Store Rental and charged to Publicity, very properly, as the publicity value of the location is one of the main reasons for locating a store in a high rental district. Some idea of the valuation placed upon windows is given by the fact that one store charges itself with a total window rental of about \$140,000 annually. The departments in this store would be very glad if the number of windows available were twice as large, regardless of rent. Direct sales from show windows are numerous in this store, which changes all window showings at least twice a week, and sets a very high standard for admittance to its windows, the selection of merchandise to be shown being entirely in the control of the Publicity Department.

CHICAGO HARDWARE RETAILERS PLAN BIG ANNUAL OUTING.

With all due regard to hardware dealers in other parts of the country it may be stated that the jolliest crowd of retail hardware dealers in any given area of America is to be found among the membership of the Chicago Retail Hardware Association. They work like the dickens when they do work. But, O Boy! when they play, troubles and problems melt away faster than a cake of ice on a hot stove. That's the reason that it is a foregone conclusion that there will be more fun at the annual outing of the Association to be held Wednesday, July 21, 1920, in Evergreen Park, 95th Street and Kedzie Avenue, Chicago, Illinois, than can be had in a combined clambake, dog and pony show, wild west circus, Fourth of July fire works, and Coney Island jazz tournament.

Because they are jolly and happy, the members of the Chicago Retail Hardware Association are more prosperous than the general run of merchants. Most of them have automobiles. The majority will, therefore, travel to the picnic grounds in their own cars. Evergreen Park can be reached also by the Grand Trunk R. R. Trains leave the Polk Street Station at 8:45 a. m., 11:30 a. m. and 3:05 p. m.

There will be every imaginable kind of sport and contest during the outing. Fat and lean, tall and short, young and old, friends and strangers will be entitled to take part in the games. Silk hats, Prince Albert coats, and grey suede spats will be barred by the Entertainment Committee. Anyone found looking serious—except when drinking water—will be heavily fined.

A big variety of prizes will be distributed among winners of the games. A partial list of the prizes and of the persons or firms which have donated them is as follows:

List of Prizes for Hardware Outing.

AMERICAN ARTISAN AND HARDWARE RECORD, 1 Santos Luncheon Set; 1 Silver Coin Purse; 1 Dutch Silver Relish Dish; 5 Yearly Subscriptions to AMERICAN ARTISAN AND HARDWARE RECORD.

American Wringer Company, 1 328 E. Wringer, 1 381 E Wringer.

E. C. Atkins and Company, 1 No. 400 26 inch Hand Saw, 1 No. 53 26 inch Hand Saw.

Cicero-Chicago Corrugating Company, 1 Box Cigars.

A. C. Barler Manufacturing Company, 1 Barler Oil Heater.

T. J. Bowler and Company, 1 Black Hawk Wrench Set. Chicago Spring Butt Company, $\frac{1}{2}$ dozen sets 1505 Hinges, $\frac{1}{2}$ dozen sets 1575 Hinges.

Cattaraugus Cutlery Company, 1 Razor.

Cleveland Stamping and Tool Company, 1 53 Rice Boiler, 1 24 Sauce Pan, 1 12 Oval Dish Pan.

Endeve Incorporated, 1 14 A Large Tool Set.

L. Gould and Company, 1 Hammock.

Gardner Wire Works, 50 Foot Calcus Wire, 1 Pair Wheels and Axle.

Geuder Paeschke Frey, 1 9 Cream City Wash Boiler.

B. Heller and Company, 1 dozen Roach Destroyer.

Johnston and Jennings, \$25.00 Cash Prize.

Lavelle Rubber Company, 1 Lady's Umbrella, 1 Box Cigars, \$5.00 Merchandise Certificate on Marshall Field, 1 Bath Spray, 1 Hot Water Bottle.

Lander, Frary & Clark, 1 Cheese Scoop, 1 Cake Knife, 1 Cake Maker.

Manhattan Electric Supply Company, 1 Electric Sadiron. National Carbon Company, 1 52652 Flash Light, 1 56250 Flash Light.

National Enameling and Stamping Company, 1 0601 Royal Convex Kettle, 1 081 Royal Convex Kettle, 1 0121 Royal Convex Kettle, 1 80 Royal Tea Kettle, 1 Oil Heater.

Norton Door Check Company, 1 D Door Closer.

Ohio Varnish Company, 1 \$6.00 Floor Outfit.

Richards-Wilcox Company, 1 400 Grindstone.

Rochester Stamping Company, 1 S 305 Perecolator.

Robeson Cutlery Company, 1 732231 Knife. Rehm Hardware Company, 1 Tool Grinder, 1 Indoor Ball, 1 Baseball, 1 Baseball Glove, 1 Food Chopper, 1 Lawn Sprinkler.

Stanley Works, 1 1776 J Garage Set.

Simonds Manufacturing Company, 1 Set Four Hand Saws.

E. Tressing and Company, 12 Safe Guard Padlocks. Vaughan and Bushnell, 2 41 $\frac{1}{2}$ Vanadium Hammers, 2 25 Nut Pliers, 4 only $\frac{1}{2}$ SAE Double Duty Spark Plugs, 25 Match Holders and Matches.

Welsbach Company, 1 1600 Gas Bowl Fixture.

J. V. Wise, \$5.00 Cash Prize.

George H. Wilkins, 1 Tool Set, 1 Auto Wrench Set.

If the recent Republican Convention at Chicago, or the Democratic Convention at San Francisco had had for their Entertainment Committee the same people who make up the entertainment of this Annual Hardware Outing, the conventions would still be in session because the delegates would be so delighted with the good times they would enjoy that they would not want to go home. The Entertainment Committee for the outing of the Chicago Retail Hardware Association consists of John C. Schuberth, Chairman, "Si" J. Koehler, Secretary, Ed. Meier, C. Gauger, and Martin Engelhart. They have arranged in advance with the Weather Bureau for a clear, sunny day with just enough breezes from the hills surrounding Evergreen Park to keep everyone in the best of humor.

MAKES SUGGESTIONS FOR BUILDING UP TRADE OF THE HOME TOWN.

Getting business anywhere is a matter of personality plus service. The merchant in a small town has plenty of opportunities for increasing his trade—especially through cooperation with his fellow merchants in building up the town. Some helpful suggestions along this line are offered as follows by E. M. Trower, Secretary Dominion Board, the Retail Merchants' Association of Canada:

The place where most people congregate in a village is the country store. It is usually a post office, the place where the farmers exchange their eggs and butter, the committee room for the politician, the headquarters for countryside gossip, a meeting place for friends, and the place where the merchant is supposed to keep everything from a needle to an anchor. It is from these centers that the villages develop into towns, and the towns into cities.

Goods in the retail stores in New York are of little value to the people of Canada. They want to be able to go into the shops in the place in which they live and examine the goods, price them, order them, and either take them home or have them delivered. They want to know also that the goods they select personally are the goods they get, and this is where the local merchant will always have the advantage over the mail order house system, which means that when you buy goods you must rely almost entirely upon the selection by other people, and not upon your own judgment. Perhaps the best illustration that can be given of the advantages of buying in the home town will be understood by those who are familiar with the question of selling boots and shoes at retail, and the correct fitting of the same.

Not long ago, the writer's attention was called to a rather singular circumstance. Visiting a small town in the cool of the evening, when the ladies of the

town were visiting the post office for the evening mail, a merchant, well posted in the boot and shoe business, called attention to the fact that ten ladies out of twelve who passed were wearing mail order shoes. He discerned them by the way in which they fitted the feet. Some were too high in the heel, others too low; some too broad and others too narrow. They were not only uncomfortable but they interfered with the poise and carriage of the wearer. Had these shoes been purchased in the home town, these faults could have been avoided, much to the comfort and well-being of the wearer, and at perhaps less cost in the end. This illustration might also apply to a large number of other articles.

The retail merchants themselves are not entirely blameless for this condition of affairs. Every merchant in business knows that the best way to shop is the legitimate way of shopping, and that is for the purchaser to see the goods, examine the quality, ascertain the price, and find out if they suit before the money is paid. The reason why these facts are not pointed out more prominently by the retail merchant is that they know so well that the above is the proper plan of buying that they believe the public generally should have the same information, whereas perhaps there is more ignorance existing among the general public with regard to the quality of merchandise than there is in connection with almost any other subject. Every merchant will bear testimony to the fact that there are many customers who have an idea that they know all about the quality of goods, whereas, as a matter of fact, they know very little, and it would pay them far better to explain their requirements to an honest merchant who knows his business, and secure his assistance in selecting the goods, and in this way they would secure better value, as well as the styles that would best suit them.

The citizens of every city, town or village should take a pride in their retail stores in their community. The better the stocks the merchants carry, the better the selection the citizens have, and the greater the number of people who purchase in the home town the better the opportunity the merchants have for increasing their stocks and carrying the latest styles. All citizens who send their money out of the town are injuring the business of the town to that extent, and they are doing an injury to those citizens who patronize the local retail merchants.

Retail merchants select goods for the convenience of their customers. They study their requirements; they understand the extent of their purse, and the goods are always on hand, ready to be delivered at a moment's notice. Merchandise in Europe is of a very little use to the citizens of any city, town or village in Canada. The goods must be here, ready and waiting, and our system of distribution is so arranged that if trade is developed along natural lines, and those who receive their money from the town patronize the town, they are not only making it convenient for themselves but also for every other resident of that town. If the retail stores were taken out of the cities, towns and villages of Canada, it would be equivalent to destroying the commercial life of Canada.

Although not generally mentioned, when the development of a city is questioned, the first thing that strikes a stranger when he enters any city or town is the character of the shops in that city or town. If they are poorly kept and poorly stocked, with unpainted fronts, the town can be considered to be on the decline. If the store fronts are well painted, and the stocks well kept, and the retail merchants alert to their business, the town is always prosperous, and it becomes an attractive place for the farmers and mechanics to congregate. It generally develops into a community hub, and the effect is reflected in the homes and in the surrounding farms. The nearer a good farm is to a thriving city, town or village, the more valuable the farm becomes, and the more valuable that farms become, the better will be the business done in the city, town or village. In this way the whole community thrives.

Buy in the home town, therefore, means very much more than appears on the surface. It benefits both the buyer and the merchant. It helps to improve the streets, to reduce taxation, to add to the enjoyment of life, to bring the goods that are made at a distance to a common center where they are needed. It circulates money, giving all an equal chance to secure some of it, and in this way buying in the home town helps the merchants, lowers the price of goods to the consumer, aids the financial institutions, gives more money in taxes for better roads, better police and fire protection, helps the newspapers, enable the municipality to pay better wages to school teachers, assists in the erection of better churches and public institutions, and, finally, establishes better residential districts, and in this way prosperous cities and towns are built up. The object, therefore, of all loyal citizens should be to buy the things they require in the place in which they live.

POSTERS HELP QUICKEN SALES.

Posters are a particularly effective medium for the local merchant now, because large numbers of working people who do not have the reading habit as do other classes of people, are earning big wages and have plenty of money to spend.

The last five years have seen an influx in most cities of thousands of new people attracted by war industries. These people are unfamiliar with the old established channels of shopping. They are mostly working men and their families, who can understand readily a pictorial message, and who are attracted by the large size and dominating color of outdoor advertising.

PRESENTED BY BUREAU OF FOREIGN AND DOMESTIC COMMERCE.

The Bureau of Foreign and Domestic Commerce, through its Special Agents, Consular Officers and Commercial Attachés, is receiving information of opportunities to sell hardware and kindred lines in several foreign countries. Names and locations will be supplied on request to the Bureau in Washington or its District Offices. Such requests should be made on

separate sheets for each opportunity, stating the number as given herewith:

33182.—A commercial agent in Ireland desires to secure the representation of firms for the sale of automobile accessories. References.

33189.—A merchant firm in India desires to be placed in touch with manufacturers and secure samples and sole agency terms for the sale of paints, oils, varnishes, general hardware and ironmongery, galvanized and barbed wire, cook stoves, etc. References.

33194.—An electrical goods firm in Canada desires to purchase automobile accessories. Quotations should be given f. o. b. shipping point. Payment will be made by on sight draft. References.

33208.—An agency is desired by a man in Germany for the sale of hardware and metal products. References.

33209.—A merchant in South Africa desires to secure an agency from manufacturers only for the sale of aluminum ware. References.

33212.—A company in Spain desires to secure an agency from manufacturers for the sale of all kinds of goods in that country. Quotations should be given c. i. f. Spanish port. Correspondence should be in French or Spanish. References.

33233.—A merchant firm in the Dominican Republic desires to secure an agency for the sale of hardware, paints and oils, etc. Quotations should be given c. i. f. Dominican ports, or f. o. b. American ports. Correspondence may be in English. References.

33218.—A company in Danzig desires to secure the exclusive agency for the sale of motor cycles, as well as tires and accessories. Quotations should be given c. i. f. Danzig, in United States currency. Payment, cash against documents at Danzig. Correspondence should be in German. Reference.

33219.—A firm of commercial agents in Portugal desires to secure an agency for the sale of American goods. Correspondence may be in English. References.

33221.—A merchant firm in China desires to purchase and secure agencies for tinplate, wire nails, window and plate glass, etc. Quotations should be given c. i. f. Hongkong. Terms, letter of credit with order. Reference.

33224.—A firm of engineers and merchants in Wales desires to secure an agency for the sale of steel plates, motor tires, motor accessories, etc. Quotations should be given c. i. f. English ports. Reference.

33201.—A merchant company in Argentina desires to secure agencies for the sale of all kinds of automobile accessories, hardware, mechanics' and carpenters' tools, and machine tools. Correspondence may be in English. References.

33202.—An importing firm in India desires to purchase and secure an agency for the sale of cutlery, crockery, lampware, etc. Quotations should be given c. i. f. Indian port. Payment, cash against documents. Reference.

33203.—An agency is desired by a merchant in Switzerland for the sale of automobiles, bicycles and supplies, etc. Correspondence should be in French. References.

33206.—A commercial agent in Switzerland desires to secure the representation of firms for the sale of motor cycles, bicycles, and electrical articles. Payment upon shipment of goods. Correspondence should be in German or French. Reference.

COMING CONVENTIONS.

Mississippi Retail Hardware and Implement Association, Agricultural College, Mississippi, July 13, 14 and 15, 1920. E. R. Gross, Secretary-Treasurer, Agricultural College, Mississippi.

Ohio State Sheet Contractors' Association, Toledo, Ohio, July 20, 21, and 22, 1920. W. J. Kaiser, Secretary, Columbus, Ohio.

Texas Hardware and Implement Association, Adolphus Hotel, Dallas, Texas, January 18, 19, and 20, 1921. A. M. Cox, Secretary, 1808 Main street, Dallas, Texas.

Pacific Northwest Hardware and Implement Association, Seattle, Washington, January 18, 19, 20, and 21, 1921. E. E. Lucas, Secretary, Hutton Building, Spokane, Washington.

Missouri Retail Hardware Association, Planters Hotel, St. Louis, Missouri, January 25, 26, and 27, 1921. F. X. Becherer, Secretary, 5106 North Broadway, St. Louis, Missouri.

Oregon Retail Hardware and Implement Dealers' Association, Portland, Oregon, January 25, 26, 27, and 28, 1921. E. E. Lucas, Secretary, Hutton Building, Spokane, Washington.

Kentucky Hardware and Implement Dealers' Association, Louisville, Kentucky, January 25, 26, 27 and 28, 1921. J. M. Stone, Secretary, Sturgis, Kentucky.

Wisconsin Retail Hardware Association, Milwaukee, Wisconsin, February 2, 3 and 4, 1921. P. J. Jacobs, Secretary, Stevens Point, Wisconsin.

Oklahoma Hardware and Implement Association, Oklahoma City, February 8, 9, and 10, 1921. W. B. Porch, Secretary-treasurer, Oklahoma City, Oklahoma.

Iowa Retail Hardware Association, Des Moines, Iowa,

February 8, 9, 10, and 11, 1921. A. R. Sale, secretary-treasurer, Mason City, Iowa.

Pennsylvania and Atlantic Seaboard Hardware Association, Incorporated, Convention and Exhibition, Philadelphia Commercial Museum, Philadelphia, February 8, 9, 10, 11, 1921. Sharon E. Jones, Secretary, 1314 Fulton Building, Pittsburgh.

Illinois Retail Hardware Association, Hotel Sherman, Chicago, Illinois, February 15, 16 and 17, 1921. Leon D. Nish, Secretary, Elgin, Illinois.

California Retail Hardware and Implement Association, San Francisco, California, February 15, 16, and 17, 1921. Leroy Smith, Secretary, 112 Market street, San Francisco, California.

Ohio State Sheet Metal Contractors' Association, Toledo, Ohio, July 20, 21, and 22, 1920. W. J. Kaiser, Secretary, Columbus, Ohio.

New England Hardware Dealers' Association, Mechanics' Building, Boston, Massachusetts, February 21, 22, and 23, 1921. George A. Fiel, Secretary, 10 High street, Boston, Massachusetts.

New York State Retail Hardware Association, Rochester, New York, February 22, 23, 24, and 25, 1921. John B. Foley, Secretary, 607 City Bank Building, Syracuse, New York.

Panhandle Hardware and Implement Association, Amarillo, Texas, May 8, 9, and 10, 1921. Troy Thompson, Secretary, Treasurer, Dalhart, Texas.

Hardware Association of the Carolinas, Charlotte, North Carolina, May 10, 11, 12, and 13, 1921. T. W. Dixon, secretary-treasurer, Charlotte, North Carolina.

RETAIL HARDWARE DOINGS.

Iowa.

Curtis and Lee have sold their hardware business at Spirit Lake to A. J. Mathews and O. T. Golden.

Kansas.

Peoples Cooperative Association have incorporated their hardware and implement store at Devon with a capital of \$15,000.

Farmington Cooperative Mercantile Association, dealers in hardware, implements, etc., has been incorporated at Farmington with a capital of \$25,000. Incorporators are M. H. Hulings and others.

Kackley Cooperative Exchange, hardware and implements, etc., has been incorporated at Kackley, with a capital of \$25,000. Incorporators are Leonard Haggman and others.

The Grangers Cooperative Association, hardware, implements, etc., has been incorporated at Lebo. Incorporators are F. W. Thorne and others.

Leloup Cooperative Association, hardware, implements, etc., has been incorporated with a capital of \$10,000 at Leloup. Incorporators are John Scott and others.

Pratt Cooperative Society, hardware, implements, etc., has been incorporated with a capital of \$25,000 at Pratt. Incorporators are E. H. Burnett and others.

S. D. Misner has bought the general merchandise store at Cornish and will add stock of hardware and farm machinery.

Roy Gilmore traded his stock of hardware at Sabetha to Sabetha Investment Company for a farm.

Elmer Day has purchased the interest of John Wells in the Central Hardware Company at Arkansas City. The business will continue under the name of Fogle and Day.

Ashton Hardware store located at southwest corner of Fifth and Iron streets at Salina, has moved to southeast corner.

The Murdock Hardware Company is erecting a building 50x140 feet of brick on the site just east of their present building at Baxter Springs.

Minnesota.

William Nevenheim has sold an interest in his hardware and implement business at Canby to G. B. Anderson. The firm will continue under the new name of Nevenheim and Anderson.

Missouri.

C. A. Meyer and Company are having a closing out sale of implements and hardware at Billings.

Sam Downing and Sons will now be known as Downing Brothers at Higginsville.

Nebraska.

Prinie Brothers are doing business with a complete line of hardware and implements at Merna.

C. F. Glazier and Son have discontinued their hardware and implement business at Paulin and will engage in the same line at Loniphon.

Oklahoma.

Schooling and Kivet will open a hardware store at El Reno.

Texas.

Ree-Kibbe Company has been chartered with \$20,000 by W. C. Ree, S. S. Nichols, Louis G. Kibbe, to purchase farm implements and tractors.

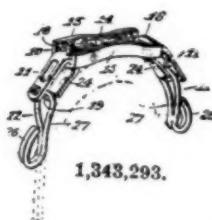
AUTOMOTIVE ACCESSORIES SOLD BY HARDWARE DEALERS

ISSUES COMPREHENSIVE CATALOGUE OF AUTOMOTIVE ACCESSORIES.

Some idea of the importance, extent, and variety of automotive accessories which can profitably be handled by the hardware dealer may be derived from catalogue No. 18 of automotive accessories and equipment just issued by the Geller, Ward and Hasner Hardware Company, St. Louis, Missouri. It contains two hundred and seventy-two pages and is profusely illustrated. The pages are nine by eleven inches, so that an uncommonly large and diversified assortment of accessories is listed and described. Dealers who are in the territory served by the Geller, Ward and Hasner Hardware Company will find it much to their advantage to secure a copy of this valuable catalogue. It will suggest many accessories which the dealer may not now be carrying and which are likely to prove profitable additions to the lines now in stock.

PROCURES PATENT FOR ANTIKID DEVICE FOR TIRES.

Guy B. Waite, New York City, has secured United States patent rights, under number 1,343,293, for an antiskid device for tires described herewith:



A transverse member for a tire antiskid device, comprising a tread-block, a sheet-metal link connected to each end of said tread-block, each of said links being formed with a wide inner-side having a relatively narrow end-piece at one end, and an outer-side connected to the inner side with a wide curve at one end and at its other end to said end-piece by an integrally formed locking and spacing means, said inner and outer-sides being spaced apart their entire length substantially the width of said curved end and forming an open loop free from obstructions between its ends, whereby said link can have a free endwise movement in either direction, said locking and spacing means embodying a tongue formed integrally with said narrow end-piece, and an opening formed in the end of said outer-side to receive said tongue which is adapted to be bent over the edge of said opening to lock the link closed, and means for detachably securing said links to the side members of the antiskid device.

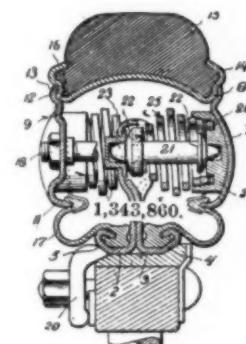
SHOWS WAY TO REPAIR GREASE GUN.

Sometimes the threads on the cap of a grease gun become so worn that the gun jumps the threads. If this occurs, take out the plunger and unscrew the cap. Next, solder a nut of the same size and thread as the

screw on the inside of the cap. This will obviate the former trouble, as the new threads will hold the cap firmly in place.

SECURES PATENT FOR TIRES.

Under numbers 1,343,860 and 1,343,861, United States patent rights have been granted to Charles E. Williams, of Pittsburgh, Pennsylvania, for tires described in the following paragraphs:

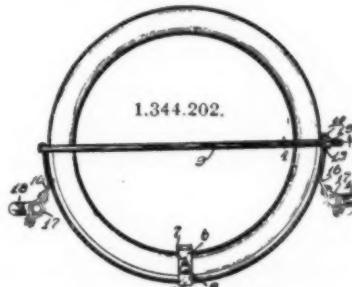


A tire comprising an annulus, a tread member including detachable side elements, spindles having a rocking connection with the side elements and said annulus, springs interposed between the side elements and annulus and bolts rigidly connecting the side elements together and having a loose connection with said annulus.

A tire comprising a tread member having an annular flange, a pair of side members slidably receiving said flange, pins projecting from said flange, and coil springs each mounted in a pocket formed in the side member and bowed in a direction toward the flange and connected thereto. The flange and connected thereto. This is an unusual device and is likely to attract considerable attention from engineers and mechanics interested in working out the problem of a tire which is proof against punctures and other disabling accidents.

SECURES PATENT FOR ADJUSTABLE TIRE CARRIER.

Under number 1,344,202, United States patent rights have been obtained by Walter R. Green, Chicago, Illinois, for an adjustable tire carrier, described herewith:



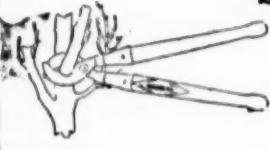
A tire carrier comprising a unitary channel member, an expanding and contracting bolt connecting the tops of the channel member, adapted to expand and contract said channel member by bending the same, and adjustable attachable brackets secured to the channel member.

Advertising Help and Comment

Send Us Copies of Your Advertisements. Let Us Help You Get Bigger Results by Advice and Suggestions. The Service Is Free. Don't Hesitate to Take Advantage of It.

All the articles which make up the advertisement of the Davis-Hunt-Collister Company, Cleveland, Ohio, deal with spraying and pruning and the care of lawns. The illustrations are plain and adequate. There is an ample allowance of white space to give the needed emphasis to the different commodities.

Spraying and Pruning Season Is Here



Tree Pruners \$1.00 to \$3.25
Rhodes Double Cut \$3.00 to \$4.00



Hand Pruning Shears \$1 to \$2.50



Long Handle Tree Pruners \$1.35 to \$2.25

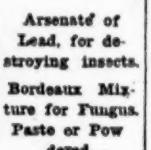
Hand Sprayers 50c to \$1.15
Bucket Sprayers \$3.00 to \$7.00
Barrel Sprayers \$12.00 to \$24.00
Barrel Carts



Arsenate of Lead, for destroying insects.



Lime and Sulphur for Scales.



Bordeaux Mixture for Fungus.



Paste or Powdered.

Coldwell Combination Lawn Mowers and Rollers

\$400.00

By rolling your lawn early you will bring the roots of the grass in contact with the subsoil.

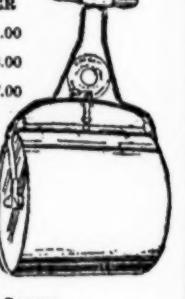
HORSE AND HAND MOWERS.

THE DURHAM WATER WEIGHT ROLLER

200 lbs.	\$11.00
310 lbs.	13.00
500 lbs.	17.00



Call or write for booklet on care of Lawns.



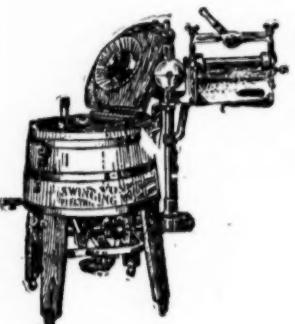
The Davis-Hunt-Collister Co.
Ontario and Prospect Ave.

The line at the bottom of the advertisement, namely, "Call or Write for Booklet On Care of Lawns," is evidence of good merchandizing because it conveys the suggestion of service. And all successful business is necessarily service. The advertisement appeared in the *Cleveland Plain Dealer*, Cleveland, Ohio.

* * *

Typographically satisfying is the Churchill Hardware Company's advertisement of the Voss Electric Washing Machine, which is herewith reproduced from the *Galesburg Daily Republican Register*, Galesburg, Illinois. Nowadays, eighty-five dollars is not

much of a sum to pay out at one time in the purchase of a household convenience. The Churchill Hardware Company, therefore, does not appreciably lessen the number of prospective customers for this electric washing machine by stating that they have no solicitors to pay and do not sell on small monthly payments. On the contrary, because of this very fact they are able to sell for much less profit. If this is one of a series of advertisements of the Voss Electric Washing Machine, it is not open to adverse criticism.



VOSS
Electric Washing Machine

\$85.00

Swinging or Stationery Wringer

We have no solicitors to pay and do not sell on small monthly payments and for that reason can sell for much less profit. We have sold hundreds in this County.

Churchill Hardware Company
White Tile Front

On the other hand, if it is the only advertisement of the article by the Churchill Hardware Company the observation may be made that its selling appeal would be strengthened by a brief mention of labor-saving advantages of this electric washer.

* * *

CITIES BEGIN TO ADVERTISE.

Merchants and manufacturers are not the only ones who make extensive use of advertising. Municipalities are now falling in line. Advertising campaigns are being conducted on a national scale by several of the largest cities in the United States. New Orleans, Kansas City and Chicago are among the leaders in this new use of advertising.

HEATING AND VENTILATING

GIVES RESULTS OF RESEARCH WORK ON THE TRANSMISSION OF HEAT THROUGH WALLS.

The results of research work on the transmission of heat through walls are published by the Research Committee of the Institute of Heating and Ventilating Engineers, a British organization. The work was carried on at the London University by Masao Kenoshita, M. Sc., under the direction of A. H. Barker, B. A., B. Sc. Herewith is reproduced an abstract of the investigations and experiments:

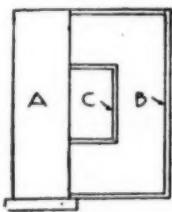


Fig. 1.

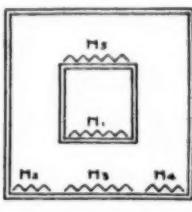


Fig. 2.

"guard casing" made of 1 inch wood. The inside surfaces are lined with thick linoleum sheets to prevent air and heat escaping. Thick rubber bands are nailed on to the edges which are pressed against the wall surface by means of angular iron bars and wedges making a good airtight chamber.

C is another square box used as a principal heating chamber. For the construction of this box, special care is taken to render its heat insulating power as high as possible by using $\frac{3}{4}$ inch thick felt panelled both sides with thin sheets of wood to keep it in the form of a rigid box.

To generate a temperature difference between the two sides of the wall, five electric heating coils are used in the positions shown in Figure 2—in which the two squares indicate the outer casing and the principal heating chamber. H_1 is the principal heating coil placed at the bottom of the principal heating chamber. Three coils H_2 , H_3 , and H_4 are laid at the bottom of the outer casing. The fifth coil H_5 is fixed on the top of the principal heating chamber. All the coils are made of resistance wire of sufficient size and length wound on frames and connected separately to a main circuit through separate external adjustable resistances. The temperature of the resistance wires in heating coils is kept as low as possible to minimize the effect of direct radiation of heat, from the wires to the neighboring surfaces. Throughout the whole tests this temperature was kept below 200 degrees Fahrenheit and the effect of radiation on the wall surface is therefore negligible compared to the amount of heat passed from the heated air to the wall.

The temperature of air at different positions and those on the wall surfaces are taken by means of cop-

per-constantan thermo-elements and measured down to 0.1 degree Fahrenheit within the accuracy of the instruments used. The temperatures of air are taken by a number of elements with free ends fixed in required positions and those of the wall by elements embedded almost visibly for their length of four inches from the junctions on the surfaces. The positions of the elements are as follows—for the outside air temperature, 1 element about 1 foot away from the wall on the same level as the center of the latter; on the cooler surface of the wall, 5 elements one at the center and four on the diagonals 15 inches from the center; on the warmer surface, nine elements, one at the center, four on the diagonals, 11.5 inches from the center, four on the vertical and horizontal center lines, 1 foot 10 inches from the center so that the first five elements are situated inside the principal heating chamber, and the others in the exterior zone of the surface; for the air on the warmer side of the wall, 12 elements, all at 4.5 inches from the wall surface except one, which is at 4.5 inches from the back of the principal heating chamber opposite to its center outside the chamber, 5 in the interior of the chamber exactly opposite to the central five on the wall surface, four exactly opposite to the other four on the wall and lastly two on the left and right hand sides of the chamber at 4 inches from the centers of the sides; six elements embedded on the inside and outside surfaces of the top, bottom and back of the chamber at their centers. Thus there were 33 elements in all. For cavity walls 3 more elements are added to take the temperatures in the cavity at its center for air and two directly opposite to it for the two surfaces of the cavity.

The principal idea of the arrangement described above is based on the principle of guard ring. A great improvement is made in the present series both in the accuracy of the test and in the cost, by using a single wall instead of a double wall of the same construction. It was assumed in the preceding tests that the two walls were of exactly the same structure, dimensions and physical properties and under exactly the same conditions of heat transmission so that the heat developed in the space between the two walls was divided into two equal parts to be transmitted by the two walls. As two walls can not be constructed exactly the same, the experimental error caused by this difference is eliminated in the present method.

The central portion of the wall surface measuring 2 feet square covered by the principal heating chamber, is the surface area used in the final calculation. The outer zone surrounding this central portion is the "guard ring" which guards against the unevenness of the flow of heat through the wall. The size of the guard ring used in the present tests is found sufficient for the required accuracy of the experiment.

Strictly speaking, the principle of the guard ring can only be applied to media which can be treated as homogeneous. In case of heterogeneous media, the stream lines of heat flow are of a complicated nature and there are in and out-flow of heat through the lateral surfaces of the central portion of the wall. The accuracy of the results therefore rests mainly on the heterogeneity of the substance of walls used. In the present series of tests, the walls which were built of concrete blocks and hollow brick tiles having their inside cavities vertically disposed can on no account be treated as homogeneous unless very large surface area is used. The heterogeneity of the structure is also increased by the convection motion of air finding its way through one cavity to the other. Hence the results obtained from these walls are approximate to the true values. To obtain more accurate results, tests must be carried out on a far larger scale as regards sizes. Another source of inaccuracy remains in the case of cavity walls in which the air in the cavity is subjected to the free convection motion. Although the object of the present tests is to have the walls under similar conditions as they are in practice leaving the air in the cavity to its own convection motion, accurate results can only be attained by either repeating the tests on a larger scale or on a different principle.

As described in a previous report great difficulty was experienced, also in the present tests, to get the air temperature everywhere in the guard ring space equal to that inside the principal heating chamber. The air in the guard ring space seemed to behave like an unstable balance travelling round the principal chamber clockwise or reversely, according to the portion of heat developed in the three heating coils placed at the bottom of the guard ring. This circulation of air, although brought practically to the steady state by careful adjustment of the heating currents, could not be stopped, and consequently there was observed a difference in temperature on the left and right of the principal chamber often amounting to as high as 3 degrees Fahrenheit. There was, however, no great difficulty in controlling the air temperature above and beneath the principal chamber by adjusting the heating currents in the coils H_3 and H_5 .

After the temperatures in various places in the heating chambers had been finally adjusted, time was still given for a few hours under dead constant heating powers to assure the steady state of the transmission of heat. Final temperature readings were then taken. The arithmetical mean of the five readings taken in the interior of the principal heating chamber, which is the temperature used in the calculation for the required coefficient of heat transmission, can not be expected to be exactly the same as the mean of the seven readings in the guard casing. Certain correction in regard to the amount of in and outflow of heat transmitted through the sides of the principal heating chamber due to this temperature difference is necessary. For this correction, the coefficient of heat transmission of the principal chamber itself must be a known quantity.

The transmission coefficient of the principal heating chamber was determined independently by closing

its open side with a panelled board of similar structure as the material used for the chamber. This enclosed box was suspended in free air with the closed side in vertical position as if it was a wall under test. Two heating coils H_1 and H_5 were used in the same positions as in the wall tests. Two thermo-elements were embedded on the inside and outside surfaces of the covering board at its center. With these two elements together with the other three pairs of elements embedded, as described before, on the inside and outside surfaces of the back, the top and bottom lateral sides, the temperature differences between the inside and outside surfaces were observed. In spite of the low temperature at which the heating wires were maintained, the inside surface of the bottom on which the principal heating coil H_1 was placed had a slightly higher temperature than the rest of the inside surfaces owing to the direct radiation from the heating wires. The coil H_5 produced a slightly higher temperature on the outside surface of the top side than on its inside and had the effect of counter balancing the undesirable temperature difference on the part of the bottom side, reducing thereby the experimental error caused by the latter to a negligible quantity. After a few hours constant and continuous heating, the inside air temperature is taken by the same five elements used in the tests.

The following walls have been tested: Brick wall having cavity, with and without ventilation; plain concrete wall, hollow concrete block; and concrete wall with cavity, with and without ventilation.

MAKES ALL VITAL PARTS STRONG

The fire pot is the heart of the warm air heater. The XXth Century Warm Air Heater, illustrated here-with, manufactured by the XXth Century Heating



XXth Century Warm Air Heater,
Made by the XXth Century
Heating and Ventilating
Company, Akron, Ohio.

and Ventilating Company, Akron, Ohio, has a strong fire pot. It will be found upon inquiry to warm air heater repair dealers that the most frequently called-for repairs are for the fire pot. Repairs are costly. The way to eliminate this expense is to install a fire pot in the warm air heater which will resist the destructive forces of heat and which will at the same time conveniently hold the fire and give forth warmth. To do this the XXth Century Heating and Ventilating Company has constructed a fire pot in accordance with scientific principles. Having corrugations in which are air cells, the fire pot in the XXth Century Warm Air Heater is able to withstand the intense heat. On the inside of the fire pot there are small slots. According to the manufacturers, these indentations on the inner side of the fire pot make it self-cleaning. Ashes will not collect in the grooves in the fire pot. The result is that only live, large coals are in

the greater portion of the fire pot at all times. The ashes drop to the bottom, where, with but little effort, they can be easily removed. Due to the existence only of live coals in the greater part of the fire pot, the heat producing qualities of this warm air heater are increased. Another section of the XXth Century Warm Air Heater which is worthy of careful consideration is the feed section. It has a gradual slope away from the top of the fire-pot. In this manner it is protected from direct contact with the intense combustion which is continually going on in the combustion chamber. It is said this greatly increases its efficiency and durability. The feed pouch is extra large and has two doors, the lower door being ample for feeding coal while the upper is provided for in use in case of need.

The air chamber in the XXth Century Warm Air Heater in connection with the air cells in the fire pot make for a direct and perfect combustion in this warm air heater. The apron forming the combustion chamber is so constructed that it will keep a free passage way, at all times, for the air to reach the burning coal without interference from the ashes in the ashpit. The saving to the coal user by this arrangement can be determined without much mental effort on the part of the dealer. To get complete information relative to the XXth Century line of warm air heaters write The XXth Century Heating and Ventilating Company, Akron, Ohio.

SAYS TRADE JOURNALS HELP MAKE BETTER BUSINESS MEN.

Trade papers are helping to make better business men, and just at this time, it is indeed especially important that every possible influence should contribute toward more efficient business methods, said Harry N. Grut, vice-president of the Mercantile Trust and Savings Bank, of Chicago, in an address before the business paper section of the recent convention of the Associated Advertising Clubs of the World in Indianapolis, Indiana.

"Making Better Business Men," he said, "seems to me a very desirable slogan for all of us to follow in our daily work and in our contact with the public, for there never was a time when careful business practice and sound thinking were so desirable."

"While I modestly give myself credit for having a reasonable amount of initiative and aggressiveness, I desire emphatically to state that I am old-fashioned in some of the fundamentals, for nobody can realize more than a man in my position the wide departure many business men have made from the business economics which from years of experience and building have proved themselves a sound foundation and have made the business men of our country the greatest producers and distributors in the world, and in the orgy of extravagance incident to the war it seems to be the desire of many to make their all in the shortest possible time. I think that we all work from inspiration, and the fallacy of this practice is most emphatically illustrated when you stop to consider that every big business was of small beginning, and its success was due to watching the little things, which after all are the big things in business life."

"While it is true that executives to some extent in their zeal to conserve the strength and perpetuity of their business have made personal sacrifices in order to permit the largest amount possible to remain in the business, in the great majority of instances I think executives are well paid.

"It is the consensus of the wise business men to build for the future, which emphatically argues against extravagance, and in the long pull I think that the advertising agencies of the country should carefully consider in advising with their clients the probability of selling them "too well," because you build to stay and you stay to build, and I leave this thought with you, because I think it is an important one."

MERITS THE STUDY OF WARM AIR HEATER INSTALLERS.

In the illustration herewith is shown the Rock Island No Streak Register, manufactured by the Rock Island Register Company, Rock Island, Illinois. In details of construction this register is precisely made. No matter how insignificant a particular may seem, the manufacturers of Rock Island No Streak Registers exercise great care in its formation. The steel used is of a superior quality. Its selection entails scrutinous care.

On the Rock Island No Streak Register shown in the accompanying illustration there are some features worthy of close



Rock Island No Streak Register. Made by the Rock Island Register Company, Rock Island, Illinois.

study. Because of the expanding, interlapping, slip joint connection, it is said this register will not streak the walls. The steel frame is placed over the single metal projection on the box and is then fastened to the box. The grill is then inserted in position at the bottom of the frame and pushed back into place. There it automatically expands the single metal projection of the box, extending out between the frame and grill. Then the grill is secured with two large oval bolts, and thus a perfectly tight joint is said to be obtained without any additional labor. Besides these time-saving features in the Rock Island No Streak Register, the fine finish put on this article gives it an attractive appearance. When this register is placed in a room it will not disfigure the general appearance of the room, but in many instances it will materially add attractiveness to the room. Summing up, the streak preventing features, the time saving details and the attractiveness of the Rock Island No Streak Register make it an article which should merit the study of warm air heater installers. To get further particulars write to the Rock Island Register Company, 1226-20 Fifth Avenue, Rock Island, Illinois.

A kind word adds to the list of customers.

SAYS TRADE ACCEPTANCE WOULD BENEFIT HEATING CONTRACTORS.

The interests of the manufacturer, jobber, and dealer have many points of divergence. But in the main they are identical. The heating and ventilating trade prospers when everyone connected therewith makes progress through better shop conditions, improved methods of work, and more advanced systems of buying, selling, and collecting.

One of the topics which has seriously engaged the trade for many years is the problem of overhead expenses. Manifestly, profits are made only after and not before overhead expenses are paid. In the item of overhead expenses there is an unnecessary element of loss due to the expenses of carrying open accounts. This loss can largely be eliminated by the use of trade acceptances.

The trade acceptance has not found favor as rapidly in the heating and ventilating industry as it should, chiefly because of its comparative novelty. The trade acceptance is of advantage not only to the manufacturer and jobber but equally beneficial to the dealer and installer.

Much pioneer educational work remains to be done in promoting the general adoption of this form of paper in the heating and ventilating field.

A good beginning has already been made in the right direction by such leading manufacturers as R. J. Schwab and Sons, Milwaukee, Wisconsin.

The standard form of trade acceptance employed by this firm is shown in the accompanying illustration. Henry E. Schwab, Vice-President and Treasurer of the company, has made a very close study of the matter from both the side of the manufacturer and of the dealer. He says:

"Comparatively few dealers are taking advantage of the use of trade acceptances. They seem to think that they must carry even a time payment contract on open account though their manufacturer competitors who do direct installation work are able to get iron-clad contracts.

"There is no practical reason, that we can see, why the heating man can not turn a great deal of the open accounts he is now carrying into trade acceptances. It would surely be of assistance to him should he require a loan and it would, without doubt, have the effect of bringing in payments on his contracts nearer the maturity dates as the demand would automatically be made through the trade acceptance, which he would place with the designated bank for collection."

There is but one way of obtaining business—publicity; but one way of obtaining publicity—advertising.—Blackwood.

DRAFTS ARE CAUSE OF FUEL WASTE.

There is not sufficient attention given to drafts when dealing with the subject of fuel economy, says a writer in *Domestic Engineering*, London, England.



I am not one of those who think that a current of cold air will be their death, in fact, on the contrary, the flowing of cold air over the body means longer life, for these currents act as a tonic, giving a more energetic circulation. However, the question is coal economy and drafts have a habit of running away with the heat units of our fuel.

In ordinary houses there are many more changes of air than is necessary and it is necessary to eliminate a number of these drafts. Mr. Barker once mentioned the layer of cold air about 12 inches high, which is to be found at the floor level. This is partly due to the leakage of cold air under the door.

Many methods have been suggested for preventing heat losses through materials, but what of the greater losses from the window crevices.

Round most windows there are open spaces of approximately one-eighth of an inch wide, and assuming a window to be 4 feet by 6 feet we have, taking the sides, top, bottom and meeting rail, roughly 24 feet or 288 inches run, one-eighth of an inch wide. Say 6 square inches for the cold to come in. If this 6 inch hole was in a window pane should we think it advisable to leave it?

Then there is the door to consider and the same question arises. We have the inlet of air all right, but where does the outlet take place? Where we have the open fire this air comes in contact with the lighted fuel, maintains its combustion by providing it with oxygen, and when heated escapes up the chimney.

For economy this ventilation must be regulated. Too much air wastes fuel and the greater part of the heat is lost; too little puts the fire out and at the same time gives insufficient air for breathing. It is due to the difficulty of regulating that the open fire is expensive; for in the best fireplace only 25 per cent of the heat given off is radiated into the room. The open fire must go.

The Howard Heater Company plans an addition to its foundry at Des Moines, Iowa, 150x300 feet, to cost \$30,000.

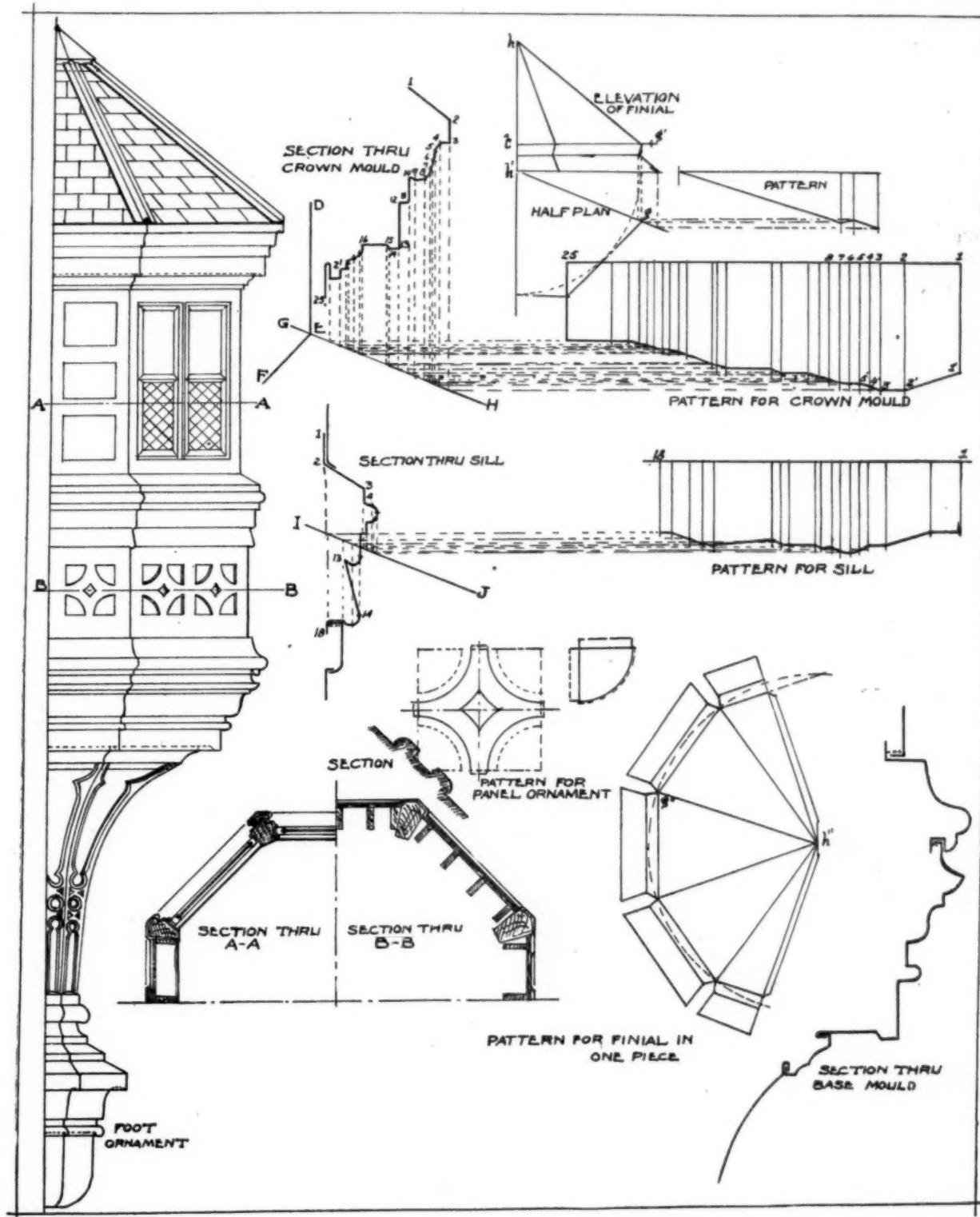
PRACTICAL HELPS FOR THE TINSMITH

ORNAMENTAL BAY WINDOW.

By O. W. KOTHE.

A bay window of tasty design is to be prized by every home. Today sheet metal men do not have that

we found numerous journeymen as well as considerable employers who would put such work on their houses, shops, etc. Sheet metal men of today have a great variety of designs to draw from, including all phases of the trade. But today most men have



rather than to *create; develop and demonstrate* their own products from which they make their living.

All the effort we put forth in our trade journals to induce the architect to specify more sheet metal cornices, barely touches the architect. I have often wondered how few really interest themselves in our numerous trade papers. An organized campaign ought to be carried into the architects' own cherished trade papers. This campaign should be backed to the fullest by the three great operators, namely, the Manufacturers' Association and Jobbers, Employing Contractors' Association and Amalgamated Unions.

The manufacturer would profit by furnishing more metal, which should be of the highest quality. The employing contractors would enjoy a greater field for work, and consequently have greater returns, and the Amalgamated Union membership would enjoy the gradual increase of more work of an artistic and skilled nature, as well as an increase in membership. It is natural what makes work should bring returns, and it generally does all along down the line. It is asking too much of the contractors alone to bolster up trade. In fact a committee from all three great organizations should meet every month to further the interest of our great trade as a whole. Where weak parts show up they should be remedied as in the cornice field, furnace work, and elsewhere.

And so in our annexed drawing we have a bay window of unusual design. When made of copper, and allowed to turn green, it is as fine a structure as could be desired anywhere. The window is of true octagon design, and really looks better in its finished state than a flat drawing. The finished structure carries with it all the elements of light and shadows, together with the recesses from the eye so that it is indeed something to admire. By this we mean tradesmen of artistic architectural ability, and not erectors of curley iron, concrete columns and such other rough course work. They too have their appreciation, but only as a whole and not by individual details.

Only the best workmen would receive it to get out and put up a job like we here show—all others can gain instruction from it. The patterns as required are of the more simple nature and so only passing comment need be made.

The crown mold is detailed full size as shown by the section. Divide all curved lines in equal spaces, and number all points and bends. Next draw the angle of wall line as D-E-F. For this angle for an octagon of true shape is on a 45 degree. Now bisect this angle establishing the miter line G-H. From all points in the section, drop lines to this miter line as shown. Observe how the miter line cuts the lines off.

Next set the girth off as on the line 1-25, using dividers and pick each space separately. Now where each point of intersection is made in the miter line G-H, project lines over into stretchout, thus crossing lines of similar lines as in points 1'-2'-3'-4', etc. Join these points with lines and we have the pattern for crown mold. The sill is developed in the same way, only we drop the miter G-H in a parallel position as 1-J and then proceed as above. The section through base mold and the foot mold ornament can be treated in the same way.

The finial requires a little treatment, and its method depends on just how it will be made in one piece or several. At the top of our drawing we show the elevation and half plan. To lay out this finial in, say five pieces, pick the girth and set out on a line with plan. Then develop the miter cut as shown. This gives the pattern for each end. But the three side rungs require this pattern doubled over. But to develop this pattern in one piece our plan must take on a true octagon shape as in this case. Pick the miter line h'-g and set as f-g; then the slant height as h-g' will give the radius for sweeping the arc in pattern.

Set dividers to this radius h-g' and using any point as h" as center strike the arc g". Then pick the side lines from plan and set them off. The end pieces are only half the width, and so must be first treated as a full side and then bisected as shown. In this same way the other end is produced. The ornaments in the panels are made as shown by the section, all edges are quite rounding. From the section A-A and B-B we see the general details of posts, etc.

In a future issue we will take up the ornamental base and other interesting parts as space does not develop them fully. The pattern drafting is not all that is required; but there is much straight work which requires equally as much thought and careful handling as the miters. Accurate measurement is also not to be overlooked.

COPPER IS USED FOR MANY PURPOSES.

Copper and its alloys have been used for coins since the dawn of history. In all of the United States coins there is a certain percentage of the red metal. Gold and silver coins contain 10 per cent copper. Five-cent pieces contain 75 per cent copper and 25 per cent nickel. One-cent pieces contain 95 per cent copper and 5 per cent tin and zinc. It has been estimated that since coinage was first begun in this country, 126,000,000 pounds of copper have been used in this work.

Then, too, copper is used extensively in other lines. For instance, in the making of pins 5,000,000 pounds are used annually, while in the manufacture of shoes 500,000 pounds a year are used in the form of eyelets, hooks, nails, etc. In the manufacture of fire extinguisher apparatus 2,000,000 to 3,000,000 pounds are used every year and cash registers and adding machines consume another 10,000,000 pounds yearly.

Copper is used to a very large extent in the manufacture of domestic articles. It is important in the making of screens, springs, shoe nails, screws, rivets, lantern slides, shade holders, brass and copper lamps, bathroom fixtures, buckles, bird cages, gas heaters, plumbing apparatus, window frames and a thousand other items.

Outside the home the red metal is in great use, very often in the form of brass or bronze. Bronze gates and doors for churches and public buildings are highly ornamental and of practically perpetual life. Bronze scroll work is in high favor, both for its rich appearance and durability.

Since the European war started, copper has been in great demand for the manufacture of ammunition, and

while no figures are available of the exact amount used it is certain that the consumption has run into millions of pounds.

Considerable brass is used in the making of ammunition. This must be of the very best quality, containing about 70 per cent copper and 30 per cent zinc, so that it will not crack in working, nor be destroyed in firing, as all shells are reloaded. The specifications of the United States Army require that shells must stand twenty reloadings without failure. The reason for this is that the case of a rifle cartridge costs 1½ cents, while the complete cartridge costs only 2½ cents altogether.

There are other uses for copper in the manufacture of ammunition. Every shrapnel shell must have a copper band about it in order to prevent the escaping of the gases. This ring averages 2½ to 3 pounds in weight per shell.

The ancient Greeks used mainly Pentelic marble for statues, and terra-cotta for statuettes, but the modern world makes its statues almost exclusively of bronze. Iron turns to rust, wood decays, marble in middle age discolors, but bronze retains the beauty and finish imposed upon by the sculptor, being subject to only slight corrosion. For general decorative purposes bronze is much used for vases, urns and similar ornamental receptacles. The best bells are of bronze. In addition to perhaps a million church bells there is a considerable number of smaller bells, mainly made of brass, used in every power plant, and for fire, burglar and messenger alarms.

Practically the entire works of a modern clock are made of brass. In the case of the Yankee \$1 watches, now to be found in the most remote corners of the earth, practically everything but the glass front and the hands are made of brass, though the case is nickel. The gear wheels and pinions of the watch, whether of the \$1 variety or a higher grade, are made of brass and the dials of watches are also made of brass and enamel.

In the business world copper is consumed to an extent far beyond the wildest guess of anyone who has not even given thought to the subject. Signs of copper, brass and bronze may be seen from every corner of crowded city streets. Brass platens are used on typewriters for heavy manifolding. Numbering and adding machines have the figures cut upon brass wheels, and brass is used in other parts of such devices. Brass wire for stapling papers is consumed extensively as brass paper fasteners, and the little brass clips so easily attached to or detached from masses of paper are used by the hundreds of millions yearly. Hundreds of tons of copper are consumed in the manufacture of metal tips for lead pencils, these being almost invariably of brass, with a thin plating of nickel. Tips of pen holders, metallic pencil holders and other miscellaneous office devices consume vast quantities of copper.

So general is the use of copper at the present time that there is hardly a phase of life which is not touched by it. In almost every branch of human activity copper has found an indispensable place for itself—a place that never can be occupied by any material so far discovered.

MILWAUKEE SHEET METAL MEN HOLD REGULAR MONTHLY MEETING.

In the absence of O. A. Hoffman, President Master Sheet Metal Contractors' Association of Milwaukee, Wisconsin, John Graf, First Vice-President, presided at the regular monthly meeting of that organization, held July 7, 1920, in Milwaukee, Wisconsin. An interesting communication from Edwin L. Seabrook, Secretary National Association of Sheet Metal Contractors, was read at the meeting. It discussed the highly important work which has been undertaken by the Trade Development Committee of the National Association.

John Bogenberger of the License Committee made an exhaustive report concerning a conference with the Council Committee. No final decision was reached and the matter was laid over for discussion at the next meeting of the Local, which is to be held the first Wednesday in September.

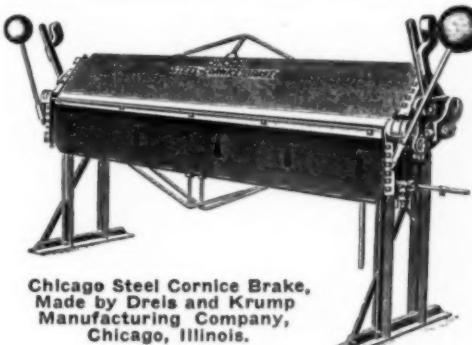
The Telephone Directory Committee reported that they were unable to obtain a conference with the representatives of the various directories.

A motion was made and unanimously carried that the annual outing of the Milwaukee Local be held in Mequon, Wednesday, August 11, 1920.

Henry Bartel gave an excellent account of the Peoria Convention and of the part taken by delegates from the Milwaukee Local in the deliberation of that gathering.

CORNICE BRAKE SERVES MANY USES.

The Chicago Steel Cornice Brake, shown herewith, is adapted for a large variety of work such as gutter, square and octagon pipe, cornice, skylights, roofing, flashing, warm air heater, ventilating, auto radiator and fender, drain boards, etc. Its rated capacity is for ordinary sheet steel and for bending a flange of one inch or wider on sheets of full capacity. In proportion, narrower flanges can be bent on lighter material. Each end operates independently, and in this way only one end need be used on short work. One



Chicago Steel Cornice Brake,
Made by Dreis and Krump
Manufacturing Company,
Chicago, Illinois.

man can work full length sheets. When the apron is lowered, the stop gage moves back entirely out of the way and is quickly set to make a number of bends at the same angle. It is also provided with a stop in front of the pivoted sleeve which holds the apron partly raised and allows the rapid crimping up of mouldings and large curves. The Chicago Steel Cornice Brake comes in sizes ranging from three to twelve feet in length and to bend up to fourteen

gauge sheet metal. For further particulars, those interested should address the Dreis and Krump Manufacturing Company, 2915 South Halsted Street, Chicago, Illinois, and ask for Catalogue Number 15.

PRESENTS A NEW SOLDERING FLUID.

One of the helpful facts of industry is that there is always room for improvement. Not least among the important aspects of sheet metal work is the advantage of using a reliable soldering fluid or paste. It is interesting, therefore, to learn that F. A. Towner, Muskegon, Michigan, is presenting to the trade a new soldering fluid which, he declares, will solder all kinds of metal, from the delicate to the very heaviest kind of work. It is said to clean and tin the soldering copper at the same time, taking the place of the old method of using muriatic acid. The manufacturer states that it gives off no fumes and is not injurious to tin. These are claims worth investigating and sheet metal workers and contractors ought not to lose the opportunity of getting acquainted with this new soldering fluid by writing for particulars and prices to the manufacturer, F. A. Towner, Muskegon, Michigan.

GET THE BUYER INTO THE BUYING MOOD.

Advertisements which fail, for any reason, to foster the thought of buying are poor advertisements, declares a bulletin from the Associated Advertising Clubs of the World, dealing especially with the use of the word "profiteer" by thoughtless merchants who hope to increase their own sales by indicating that there is something decidedly wrong or dishonest about the methods of some other business man.

"Advertising is a form of salesmanship, and the knack of selling calls for getting the buyer into the buying mood. It should make him think about buying, instead of thinking of not buying," says the bulletin. This bulletin quotes the following timely statement recently issued to Iowa business men by the Better Business Bureau (vigilance committee) of Des Moines, which is a part of the advertising club movement, and the advertising association particularly commends the thought to all who use advertising as a means for promoting sales:

"A number of advertisements have been called to our attention, in which the word 'profiteer' is used—generally to the effect that the advertiser is helping the dear public to beat the game and to overthrow the said profiteers.

"We have handled several instances of this kind, in which we were able to convince the offending advertiser that such copy cast a reflection upon all other business men in the city, and that he would find difficulty in maintaining an attitude of being the only pure white light in a grey and cheerless world.

"These incidental services of the Bureau are often of greater value to business as a whole than catching an out and out crook. We believe in constructive advertising and that the use of such statements can not prove otherwise than detrimental."

NOTES AND QUERIES.

Spiral Fin Tubing.

From J. H. Barnett's Sheet Metal Works, 312 West Front Street, Dodge City, Kansas.

Please tell me who makes spiral fin tubing for radiator cores.

Ans.—F. L. Curfman Manufacturing Company, Maryville, Missouri; Dallas Brass and Copper Company, 820 Orleans Street, Chicago, Illinois.

Spot Welding Machines.

From C. Cartwright, 1304 St. Marys Avenue, Fort Wayne, Indiana.

Can you tell me who manufactures spot welding machines.

Ans.—Automatic Electric Welder Company, 618 West Jackson Boulevard, Chicago, Illinois; Taylor Welder Company, 1150 Peoples Gas Building, Chicago, Illinois; Thomson Electric Welding Company, 523 Sheldon Street, Chicago, Illinois; Globe Stove and Range Company, Kokomo, Indiana.

Zero King Pipeless Furnace.

From Standard Oil Company, 910 South Michigan Avenue, Chicago, Illinois.

We would like to know the name of the manufacturer of the Zero King pipeless furnace.

Ans.—Wells Furnace and Supply Company, St. Louis, Missouri.

Combination Toy.

From Hagen and McCormac, Ames, Iowa.

Will you kindly advise us who makes a toy in the form of a combination pop gun and horn?

Ans.—E. B. Estes and Sons, 364 Fifth Avenue, New York City; Markham Air Rifle Company, Plymouth, Michigan.

Asbestos Shingles.

From Iverson Hardware Company, Lock Box 165, Vermilion, South Dakota.

Can you tell me who manufactures asbestos shingles?

Ans.—Keasbey and Mattison Company, 222 West Lake Street; Paul J. Krez and Company, 444 North LaSalle Street; both of Chicago, Illinois.

Kelsey Hot Air Furnace.

From Chicago Furnace Supply Company, 549 West Monroe Street, Chicago, Illinois.

We would like to know who in Chicago handles the Kelsey hot air furnace.

Ans.—John J. Kidd, 369 North Cicero Avenue, Chicago, Illinois.

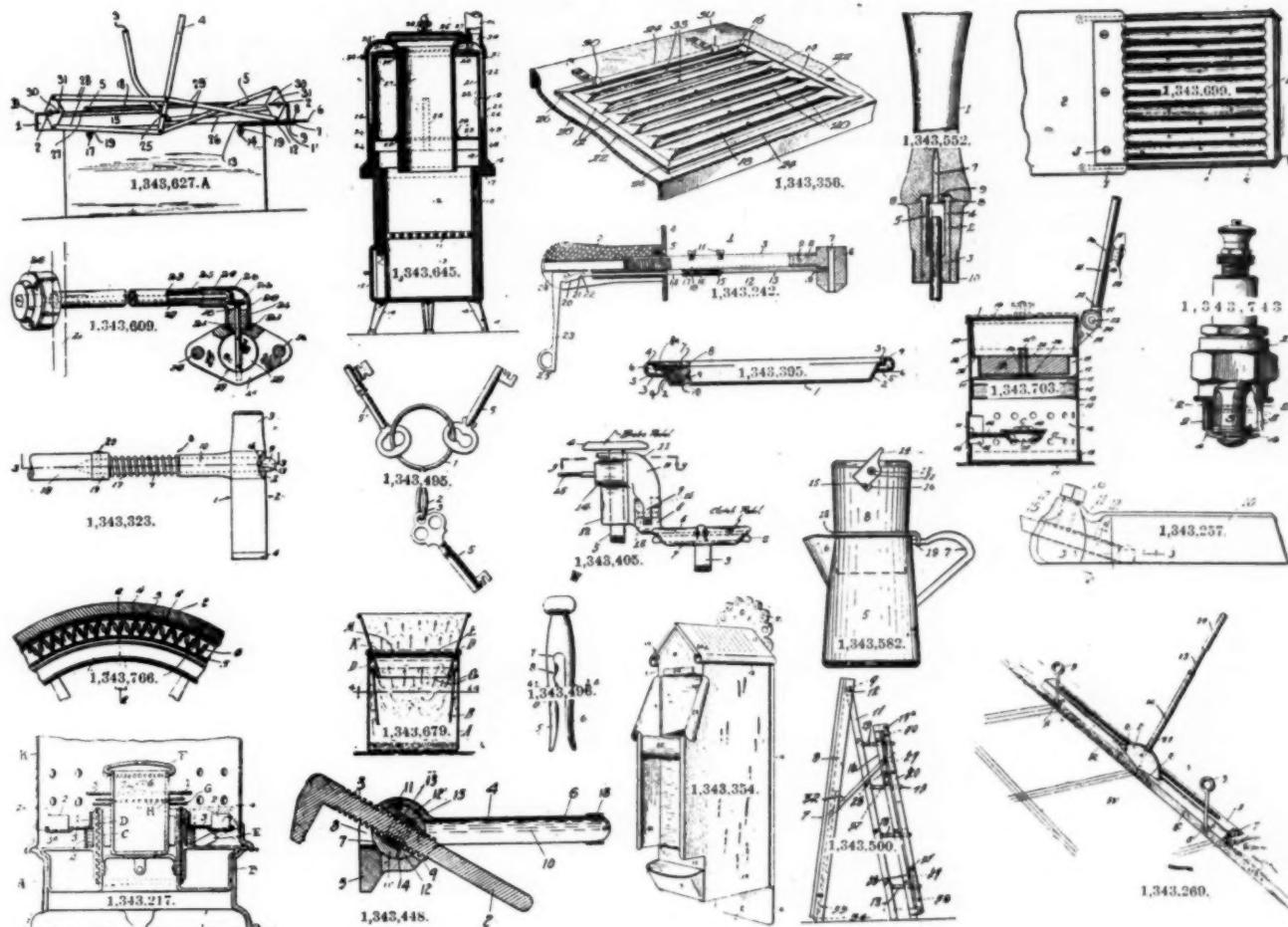
ITEMS.

The Commonwealth Sheet Metal Works, Incorporated, has been organized with \$11,000 capital by Hugo R. Swanson, Erik M. Schwartz and E. A. F. Kohler, at Boston, Massachusetts.

The Hugh L. Turner Sheet Metal Company of Oklahoma City, Oklahoma, recently was incorporated with a capital stock of \$25,000, by Hugh L. Turner, J. W. Parkins and A. J. Arendell.

The Central Cornice and Skylight Works, 909 Springfield Avenue, Irvington, New Jersey, has been organized to engage in the manufacture of sheet metal products, by John Brisco, 67 Ball Street, and others.

NEW PATENTS.



1,343,217. Safety Device for Oil Heaters and Lamps. John Lazier MacDowall, Perth Amboy, and William Kipp Bassford, Metuchen, N. J. Filed Aug. 9, 1919.

1,343,242. Welding Tool. Richard E. B. Wakefield, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a corporation of Pennsylvania. Filed November 6, 1919.

1,343,257. Tool Holder. Joseph C. Fletcher, Chicago, Ill., assignor to Armstrong Bros. Tool Co., Chicago, Ill., a corporation of Illinois. Filed July 17, 1919.

1,343,269. Lawn Edge Trimming Gage. Joseph Lees, West Bethlehem, Pennsylvania. Filed November 15, 1919.

1,343,323. Cold-Chisel. George A. Kissinger, San Gabriel, California. Filed October 13, 1919.

1,343,354. Match Box Holder. Max Dettman, San Francisco, California. Filed August 14, 1919.

1,343,356. Metallic Foot Mat. Joseph S. Doe, Burnham, Illinois. Filed July 5, 1919.

1,343,395. Pie Pan. Gustavus A. Kinkel, Buffalo, New York. Filed August 8, 1919.

1,343,405. Automobile Pedal Lock. Brady Parmenter, Birmingham, Alabama, assignor, by direct and mesne assignments, to A. L. Atwood, Birmingham, Alabama. Filed September 29, 1919.

1,343,448. Quick Adjustable Screw Wrench. Julius Max Grenzfelder, St. Louis, Missouri. Filed February 14, 1919.

1,343,495. Key Ring. Virginia Davis, New York, New York. Filed March 26, 1919.

1,343,496. Clothespin. Virginia Davis, New York, New York. Filed August 26, 1919.

1,343,500. Combination Ladder and Ironing Table. Samuel Gellis, New York, New York. Filed July 22, 1919.

1,343,552. Handle for Tools. Horatio S. Earle, Detroit, Michigan, assignor to H. S. Earle Manufacturing Company, Detroit, Michigan, a corporation of Michigan. Filed March 10, 1917.

1,343,582. Coffee Pot. Francis J. Rabbeth, Redlands, California. Filed July 7, 1919. Serial No. 309,073.

1,343,609. Locking Device for Motor Vehicles. Millard Earl Bassett, Pontiac, Michigan. Filed June 6, 1919.

1,343,627. Box Opener. Joseph Heiligenstein, Altamont, Illinois. Filed January 22, 1920.

1,343,645. Heating Stove. George G. Scarborough, Girdletree, Maryland. Filed May 2, 1919.

1,343,679. Strainer. Hugo Mock, New York, New York. Filed January 23, 1919.

1,343,699. Flatiron Rest. Catherine V. Wilson, Toledo, Ohio. Filed October 10, 1919. Serial No. 329,844.

1,343,703. Shaving Kit. James Barrett, New York, New York. Filed November 11, 1918.

1,343,743. Automatic Cleaning Device for Spark Plugs. William Ceril Oursler, Memphis, Tennessee, assignor to Sam Rice Oursler, Memphis, Tennessee. Filed October 10, 1919.

1,343,766. Resilient Tire. Alonso A. Culbertson, Topeka, Kansas. Filed October 22, 1918.

PRACTICE AND PUSH "SAFETY FIRST."

Do you set a good example by crossing streets only at the crossing walk, stopping first to look both ways?

What is the value of that moment you saved by taking an unnecessary chance?

Ask the man who hast lost a leg or an arm through carelessness—he knows.

So many men were killed and so many were crippled during the war that conservation of humanity is much more important now than ever before.

Render first aid to the injured, but also think "Safety First" and so, reader, render first aid to the uninjured.

WEEKLY REPORT OF TRADE AND THE MARKETS

STEEL PRODUCTION CONTINUES TO BE HANDICAPPED BY SHORTAGE OF RAW MATERIALS.

Although there has been an increase of fuel supplies to the steel industry, production continues to be handicapped by a shortage of raw materials. It is the general belief in the steel industry that no relief from the sporadic strikes in the labor element of the railroads will be effected until the Labor Board awards a wage increase. It is also apparent that still further relief is dependent on a larger supply of cars than are now owned by the railroads. The shortage of cars during the week just passed has been greater than for some time past and the supply of coal was increased at the expense of raw materials by the Interstate Commerce Commission order restricting the use of open top cars to the movement of coal.

Owing to the method of loading, iron, coke, coal, limestone, ore and scrap must of a necessity have open top cars and already a curtailment of operation is reported from some districts because of lack of cars in which to effect movements of these raw materials. Iron and steel production is between 75 and 80 per cent of capacity and finished material is piling up.

Traffic difficulties have probably affected the steel mills of the Calumet district near Chicago more than any other during the past week and as they report a 33 1-3 per cent curtailment and 88,000 men are threatened with unemployment, steel makers are producing as much as the fuel supply will permit and shipping as much as the car supply will allow.

Coal and steamer shortage still curtails iron ore mining on the Minnesota ranges, but mining men are hopeful that the congestion has been relieved and expect that the situation will improve from now on as the movement for the past few days has been very satisfactory.

Motor trucks are still being extensively used by the mills to move their finished products and it is estimated that between 2,000 and 3,000 tons are moved in this manner daily from the mills to the immediate Pittsburgh district. In the Mahoning Valley the iron and steel output is between 75 and 80 per cent of capacity while at Buffalo it is very near normal.

STEEL.

It is estimated that fully 2,000,000 tons of steel products have been accumulated in warehouses and in storage yards at the various steel plants of the country because of the inability of the railroads to handle the traffic by the mills. The subsidiary companies of the leading interest and also independent plants produced more finished steel in June than it was possible to ship. It is believed that at least 600,000

tons was added in June to the previous accumulation at the mills.

According to reports from the interior recent accumulations have been more of semi-finished than of finished products and including the semi-finished steel that has not been transferred to finishing plants it is estimated that the accumulation of stocks is nearer 2,500,000 tons than 2,000,000 tons. Conservative estimates, however, point to the latter estimate as more nearly correct.

Plate mills in the Chicago and eastern districts anticipate inquiries for about 25,000 tons of steel bars, plates and shapes from shipbuilders on the Pacific coast as a result of the recent placing of contracts for 6 large tank ships on British account and for 2 large tankers for the Standard Oil Company of New Jersey, with the Western Pipe & Steel Company. It is believed that the ships will be built at the Schw-Batcher ship yards at San Francisco. The building of each of these ships will require about 3,000 tons of steel or a total of a little less than 25,000 tons.

COPPER.

Copper inquires are increasing for third and fourth quarter commitments, although most of the domestic business calling for quick deliveries is still being transacted in the outside market, where quotations vary for small lots all the way from 18 cents to 18 1/2 cents f. o. b. refinery. Lake is still quoted by the leading producers at 19 cents to 19 1/4 cents a pound and electrolytic at 18 3/4 cents to 19 cents a pound.

In the years before the war foreign consumers invariably were able to secure their requirements of American copper at substantially under the average prices paid by domestic manufacturers. Sharp recessions in the London standard copper market would occur just before the big foreign consumers found it necessary to come into the market for new purchases. This action would be interpreted by domestic consumers as an indication of much lower metal prices and they would withhold their buying, while in the meantime the foreign interest would be accumulating. There are reasons for believing that the old tactics are being adopted today. Steady accumulation of the red metal has been going on by foreign interests, while the standard copper market in London has exhibited a weak position and stories of dearth of American exports have appeared in many trade journals.

Some of the larger domestic consumers are beginning to sense the true situation, and were it not for the fact that their business operations are being so restricted by what some terms as almost "unconquerable circumstances," a new buying movement of large proportions would undoubtedly start. One of the largest makers of copper wire says: "At no time in our experience have we encountered conditions more

chaotic and more unsatisfactory. Copper is not going into construction as it ought to, but the need is still there. When we have sufficient men we are short of raw material; when we have sufficient raw material we are short of men; when we have sufficient men and raw material we are short of power due to coal shortage."

TIN.

The feature of the tin market during the latter part of last week was the strong advance in price both here and abroad. Spot Straits and 99 per cent metal advancing two cents between Wednesday and Friday and spot Straits and Standard tin gained £14 during the same period. Consumers were not much in evidence throughout last week and very little trading was done in the domestic market. The condition throughout the entire metal market in London is much improved. Spot Straits is comparatively scarce in New York. On the other hand the stronger tone to the market is attracting a larger volume of inquiries than for some time past. However, the consumers of tin in this country are still handicapped by transportation and labor troubles. Imports of tin during the month of June totaled 4,730 tons and there are 2,745 tons en route.

LEAD.

The London lead market has advanced steadily throughout the week just passed and the domestic market has shown a corresponding firmer tone, although there was no noticeable change in quotations. The leading interest quoted spot New York at 8 cents and spot St. Louis at 7.75, but the metal is so scarce in the New York market that these prices are nominal and the outside market has been asking a higher figure, say 30 or 40 points. The present low prices were quoted to keep London firms from dumping their surplus onto this market, and with an increase in quotations in London a corresponding advance will probably take place here at an early date. Consumers are not buying as yet and still claim to be well booked for this month.

In the Chicago market, American pig lead has advanced from \$9.00 to \$9.10 per 100 pounds and bar lead from \$9.50 to \$9.60 per 100 pounds.

SOLDER.

An additional decline has taken place in the Chicago solder market. Prevailing prices as follows: Warranted, 50-50, per 100 pounds, \$33.50; Commercial, 45-55, per 100 pounds, \$30.80; and Plumbers, per 100 pounds, \$28.10.

ZINC.

The dominant feature of the domestic zinc market last week was the closing down of over 75 per cent of the mines of the Joplin district in Missouri, with a resulting stronger tone in the market and higher prices. Prices lower than cost of production, labor troubles and shortage, low prices and large stocks in London and relatively high production and small demand here are the causes of the steady decline in price since the first of the year culminating in the

wholesale suspension of operations last Thursday. Domestic prices have advanced from 30 to 50 points during the last two days of trading last week and are now 8.25 for spot New York and 7.75 for spot St. Louis. The duration of this curtailment of output is indefinite, but certain it is that some of the mines will never open again, as the only reason for their being operated at all was the high prices and large demand caused by the war. The seasonal drift of miners to the ranches saves the labor element much embarrassment.

TIN PLATE.

Tin plate mills are operating at approximately 80 per cent of normal with an estimated accumulation of 800,000 boxes of tin plate as compared to 2,500,000 boxes just prior to the priority order of the Interstate Commerce Commission. This priority of movement order ran out last week and it was decided that in the face of the heavy movement effected tin can manufacturers had been sufficiently relieved and the order was not renewed.

SHEETS.

Sheet offerings generally continue scarce and prices are firm, and that this is especially true of galvanized sheets. The latter can be had at resale for third quarter shipment at 9.50 cents to 10.00 cents, base, Pittsburgh, but spot galvanized sheets are bringing 11.00 cents to 11.50 cents. Black sheets for third quarter may be had at resale at around 8.00 cents, base, Pittsburgh, while spot black sheets at resale are bringing 8.50 cents to 9.00 cents, base. Blue annealed sheets at resale are bringing 7.00 cents, base, Pittsburgh, for third quarter and 7.50 cents to 8.00 cents, base, for spot shipment.

OLD METALS.

Wholesale quotations in the Chicago district which may be considered nominal are as follows: Old steel axles, \$32.00 to \$33.00; old iron axles, \$39.00 to \$40.00; steel spring, \$23.00 to \$24.00; No. 1 wrought iron, \$24.50 to \$25.00; No. 1 cast, \$35.50 to \$36.50; all net tons. Prices for non-ferrous metals are as follows, per pound: Light copper, 12 cents; light brass, 8 cents; lead, 6 cents; zinc, 4 cents; cast aluminum, 22½ cents.

PIG IRON.

Somewhat heavier demand continues to be manifested in the Chicago pig iron market, much of it being for spot delivery while tonnages also are being asked to supplement purchases already made for last half. Particular inquiry is coming from malleable melters as orders on their books from the railroads continue to increase. The leading producer here is taking little beyond small spot tonnages made available from time to time and portions of larger inquiries from regular customers. The new rule preventing shipment within the Chicago switching district except on special permit is having the effect of causing a larger proportion than usual of local furnace output being shipped to outside users, and is curtailing somewhat the tonnage sent to Chicago foundries.

Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

The prices and discounts quoted on this and the following pages, are, for the most part, subject to change without notice. Owing to the unsettled condition of the markets and the shortage of materials it is practically impossible for any manufacturer to guarantee his price for any given length of time.

METALS		LEAD.	AUGERS.	BEATERS.
PIG IRON.		American Pig \$ 9 10 Bar 9 60 Sheet.	Boring Machine 40 @ 40 & 10% Irwin's 25% Carpenter's Nut 50%	Carpet. Per doz. No. 7 Tinned Spring Wire \$1 10 No. 8 Spring Wire cop- ered 1 50 No. 9 Preston 1 75
Basic \$43 00		Full coils per 100 lbs. \$11 50 Cut coils per 100 lbs. 11 75	Hollow.	Egg. Per doz. No. 50 Imp. Dover \$1 10 No. 102 " Tinned 1 25 No. 150 " hotel. 2 10 No. 10 Heavy hotel tinned 2 10 No. 13 " " 3 20 No. 15 " " 3 60 No. 18 " " 4 50
Southern Fdy. No. 2 46 60			Post Hole.	
Lake Sup. Charcoal. 57 50-60 50			Iwan's Post Hole and Well 30%	
Malleable 43 50			Vaughan's, 4 to 9 in. per doz. \$14 00	
FIRST QUALITY BRIGHT TIN PLATES. Per box			Ship.	Hand
IC 14x20..... 112 sheets \$16 80			Ford's, with or without screw Net list	8 9 10 12 Per doz. \$11 50 13 00 14 75 18 00
IX 14x20..... 18 75				Moulders'. 12-inch Per doz. 20 00
IXX 14x20..... 20 45				
XXX 14x20..... 21 90				
XXXX 14x20..... 23 15				
IC 20x28..... 33 60				
IX 20x28..... 37 50				
IXX 20x28..... 40 90				
XXX 20x28..... 43 80				
XXXX 20x28..... 46 30				
COKE PLATES.				
Cokes, 180 lbs. 20x28 \$19 80				
Cokes, 200 lbs. 20x28 20 00				
Cokes, 214 lbs. IC 20x28 20 70				
Cokes, 270 lbs. IX 20x28 24 09				
BLUE ANNEALED SHEETS.				
No. 10..... per 100 lbs. \$5 27				
No. 12..... per 100 lbs. 5 32				
No. 14..... per 100 lbs. 5 37				
No. 16..... per 100 lbs. 5 45				
ONE PASS COLD ROLLED BLACK.				
No. 18-20..... per 100 lbs. \$7 80				
No. 22-24..... per 100 lbs. 7 85				
No. 26..... per 100 lbs. 7 90				
No. 27..... per 100 lbs. 7 95				
No. 28..... per 100 lbs. 8 00				
No. 29..... per 100 lbs. 8 10				
GALVANIZED.				
No. 16..... per 100 lbs. \$8 75				
No. 18-20..... per 100 lbs. 8 90				
No. 22-24..... per 100 lbs. 9 05				
No. 26..... per 100 lbs. 9 20				
No. 27..... per 100 lbs. 9 35				
No. 28..... per 100 lbs. 9 50				
No. 30..... per 100 lbs. 10 00				
WELLSVILLE POLISHED STEEL.				
No. 18-20..... per 100 lbs. \$9 65				
No. 22-24..... per 100 lbs. 9 75				
No. 26..... per 100 lbs. 9 85				
No. 27..... per 100 lbs. 9 95				
KEYSTONE HAMMERED POLISHED STEEL.				
Discontinued. New product will be announced later.				
BAR SOLDER				
Warranted.				
50-50 per 100 lbs. \$33 50				
Commercial.				
45-55 per 100 lbs. 30 80				
Plumbers' per 100 lbs. 28 10				
ZINC.				
In slabs \$8 50				
SHEET ZINC.				
Solid Wrought.... 23 & 23 1/2 per lb.				
Cask lots 15c				
Less than cask lots.... 15 1/2-15 1/4c				
COPPER.				
Copper Sheet, mill base.... 29 1/2c				
ASBESTOS.				
Board and Paper, up to 1/16" 17c per lb.				
Thicker 18c per lb.				
ANVILS.				
BASKETS.				
Clothes.				
Small Willow.... per doz. 15 00				
Medium Willow.... 17 00				
Large Willow.... 20 00				
Galvanized 1 bu. 1 1/2 bu.				
Per doz. \$16 08 \$18 72				
BEATERS.				
Carpet. Per doz.				
No. 7 Tinned Spring Wire \$1 10				
No. 8 Spring Wire cop- ered 1 50				
No. 9 Preston 1 75				
Egg. Per doz.				
No. 50 Imp. Dover \$1 10				
No. 102 " Tinned 1 25				
No. 150 " hotel. 2 10				
No. 10 Heavy hotel tinned 2 10				
No. 13 " " 3 20				
No. 15 " " 3 60				
No. 18 " " 4 50				
HARDWARE				
ADZES.				
Carpenters'.				
Plumbs Net				
Coopers'.				
Barton's Net				
White's Net				
Railroad.				
Plumbs Net				
AMMUNITION.				
Shells, Loaded, Peters.				
Loaded with Black Powder, Less 18%				
Loaded with Smokeless Powder, medium grades, Less 18%				
Loaded with Smokeless Powder, high grade, Less 18%				
Winchester.				
Smokeless Repeater Grade, Less 15%				
Smokeless Leader Grade Less 15%				
Black Powder..... Less 15%				
U. M. C.				
Nitro Club..... 18%				
Arrow 18%				
New Club..... 18%				
Gun Wads—per 1000.				
Winchester 7-8 gauge 10 & 7 1/2% " 9-10 gauge 10 & 7 1/2% " 11-28 gauge 10 & 7 1/2%				
Powder	Each			
DuPont's Sporting, kegs. \$11 25 " " 1/2 kegs 3 10 " " 1/4 kegs 5 75 " " canisters 1 00				
DuPont's Canisters, 1-lb. 56 " " Smokeless, drums 43 50 " " kegs. 22 00 " " 1/4 kegs. 5 75 " " canisters 1 00				
Hercules "E.C." and "In- fallible", 50 can drums. 43 50				
Hercules "E.C.", kegs. 22 50				
Hercules "E.C.", 1/2-kegs. 11 25				
Hercules "Infallible", 25-can drums 22 00				
Hercules "Infallible", 10 can drums 9 60				
Hercules "E.C.", 1/4-kegs. 5 75				
Hercules "E.C." and "In- fallible", canisters 1 00				
Hercules W. A. .30 Cal. Rifle, canisters 1 25				
Hercules Lightning Rifle, canisters 1 25				
Hercules Sharpshooter Rifle, canisters 1 25				
Hercules Unique Rifle, can- isters 1 50				
Hercules Bullseye Revolver, canisters 1 00				
BALANCES, SPRING.				
Sight Spring Net				
Straight Net				
BAGS, PAPER NAIL.				
Pounds.... 10 16 20 25				
Per 1,000.... \$5 00 6 50 7 50 9 00				
BARS, CROW.				
Pinch or Wedge Point, per cwt. \$8 00 to \$9 00				
COUNTERSINK.				
No. 18 Wheeler's .. per doz. \$2 25				
No. 20 " .. 3 00				
American Snailhead " 1 75				
Rose " 2 00				
Flat " 1 40				
Mahew's Flat " 1 60				
Snail " 1 90				
DOWEL.				
Russell Jennings plus 20%				
GIMLET.				
Standard Double Cut Gross \$8 40				
Nail Metal Single Cut Gross \$4 00-\$5 00				
SCREW DRIVER.				
No. 1 Common 40				
No. 26 Stanley 75				

BLACKING, STOVE, (See Polish)	Well.	Picture Chains.	Saw Fillers.
	Oak, Wrought Iron Riveted Top Ears.....per doz. \$8 00	Light Brass, 3 ft..per doz. \$1 25 Heavy Brass, 3 ft.. " 1 75	Wentworth's, No. 1, \$12.50; No. 2, \$18.25; No. 3, \$16.25.
BLADES, SAW.	BURRS, RIVETING.	Sash Chain.	CLAWS, TACK.
Butchers'.	Copper Burrs only...25% above list	(Morton's) Steel, per 100 ft.	Wood hdl. No. 10...per doz. \$0 95 Forged steel, wood hdl. " 1 75 Solid steel..... " 3 40 Giant " 50
Standard, 1/4-in....Nets	Tinners' Iron Burrs only....30%	0..... \$2 50 2..... 3 10 1..... 3 60	
Clock Spring..... "		1 Champion Metal.	
Star "		0R..... 5 40 2R..... 5 60 1R..... 7 75	CLEANERS.
Hack.	BUTTS.	Cast Iron.	Drain.
Atkins 5% Star Nets		7 1/2% Wrought Brass (New List) Plus 5% Wrought Steel, Bright....40% Wrought Steel, Japanned,	Iwan's Adjustable.....25% Iwan's Stationary.....30%
Wood.	CALIPERS.	Champion Metal.—Extra Heavy.	Pot.
Dissston Nos. 6 66 26 \$8 00 \$8 50 \$8 00	Double Nets Inside and Outside..... "	1H..... 9 50	Wireper doz. \$0 75
Atkins Nos. 2 14 18 \$2 85 \$6 50 \$4 75	Wing	Cable Sash Chains.	Side-Walk.
BLOCKS.	CALKS	Steel.....List Net Plus 15%	Steel.....per doz., Net prices
Wooden 20% Patent 20%	Logger's Boot.	CHALK, CARPENTERS.	CLEAVERS.
BOARDS.	(Lufkin R. Co.'s), per M..\$7 00	In bags.....per bag \$1 70	Family.
Stove.	Toe.	CHIMNEY TOPS.	Beatty's, Inch.... 7 8 9 10 Per doz. \$27 00 29 00 33 00 36 00
Wabash Crystal.....Net Prices Wabash Art Inlay.... "	Blunt and medium, 1 prong, per 100 lbs.....\$6 20 Sharp, 1 prong, per 100 lbs 6 70	CHECKS, DOOR.	CLEVISES.
Wabash Embossed.... "	Corbin.....Net List Russwin..... 20%	In bags.....per bag \$1 70	Malleable10c lb.
Wash.	CANS.	CHISELS.	CLIPPERS.
No. 760, Banner Globe, (single)per doz. \$5 25 No. 652, Banner Globe, (single)per doz. 6 75 No. 801, Brass King per doz. 8 25 No. 860, Single—Plain Pump 6 25	Milk.	Box.	Bolt \$2 25&6 00
BOLTS.	Elgin. Gals.... 5 8 10 Each \$4 00 \$5 15 \$5 15	Iwan's Volcano.....35%	CLIPS.
Carriage, Machine, etc.	Iowa Patterns. Gals.... 5 8 10 Each \$4 00 \$5 15 \$5 15	CHECKS, DOOR.	Axle 65&5%
Carriage, cut thread, 3/8x6 and sizes smaller and shorter 30% Carriage, sizes larger and longer than 3/8x6 20% Machine, 3/8x4 and sizes smaller and shorter 35% Machine, sizes larger and longer than 3/8x4 25% Stove 50-10% Tire 40-5%	See Openers.	Corbin.....Net List Russwin..... 20%	Damper.
Mortise, Door.	CAN OPENERS.	CHISELS.	Standardper doz. 70c Troy " 38c
Gem, iron.....5% Gem, bronze plated.....5%	CAPS, GUN.	Box.	Name " 50c
Barrel.	CARPET STRETCHERS.	Inches..... 12 14 Round, per doz....\$5 25 5 75 Flat, per doz.... 7 25 8 25	CLOTH.
Cast Nets Wrought "	See Stretchers.	Cold.	Emery.
Wrought, bronzed	CARRIERS.	Good quality, 3/8 in. and largerNets Smaller size, per doz.....Nets	Star New Prices B. & A. "
Flush.	Hay.	Box.	Cold.
Wrought "	Diamond, Regular...each. Nets Diamond, Sling..... "	Inches..... 12 14 Round, per doz....\$5 25 5 75 Flat, per doz.... 7 25 8 25	Good quality, 3/8 in. and largerNets Smaller size, per doz.....Nets
Spring.	CARTRIDGES.	CHISELS.	Emery.
Wrought "	See Ammunition.	Box.	Star New Prices B. & A. "
Square.	CARRIERS.	CAN OPENERS.	Cold.
Wrought "	Hay.	Box.	Good quality, 3/8 in. and largerNets Smaller size, per doz.....Nets
BORERS.	Diamond, Regular...each. Nets Diamond, Sling..... "	CAPS, GUN.	Box.
Angular.	CATCHERS, GRASS.	CARTRIDGES.	Inches..... 12 14 Round, per doz....\$5 25 5 75 Flat, per doz.... 7 25 8 25
Miller's Falls....per doz. \$23 00 Sill borers, No. 51 " 34 00 " 52 " 39 50	CASTERS.	CHURNS.	Box.
Bung.	Standard—Ball Bearing.....50&10%	Anti-Bent Wood, Gal..... 5 7 10 Each \$3 90 4 60 4 85	Box.
Enterprise Mfg. Co.'s No. 1.10% " No. 2.10%	Bed40%	Belle, Barrel65&7 1/2% Common Dash, Gal..... 5 7 Per doz. 17 00 19 00	Box.
BOXES.	Common Plate.	CHURNS.	Box.
Mall, No. 2 4 10 Per doz....\$18 00 23 00 29 00	Brass Wheel.....15% Iron and porcelain wheels, new list50% Philadelphia Plate, new list50% Martin's40%	Anti-Bent Wood, Gal..... 5 7 10 Each \$3 90 4 60 4 85	Box.
Mitre.	CATCHERS, GRASS.	Belle, Barrel65&7 1/2% Common Dash, Gal..... 5 7 Per doz. 17 00 19 00	Box.
Stanley's.....Net Prices Stearns, No. 2...per doz. \$30 00	No. 160S, per doz.....\$12 25 No. 165S, " 14 01	Common Plate.	Box.
BRACES.	CEMENT, FURNACE.	Carriage Makers'.	Box.
Fray's Genuine Spofford's 20&10% Fray's No. 08 \$7 50 " No. 010 8 00	American Seal, 5 lb. cans, net \$0 45 " 10 lb. cans, " 90 " 25 lb. cans, " 1 87	2 1/2"per doz. \$7 00 5" " 14 00 8" " 28 00 12" " 46 00	Pointed Roofing.
BRACKETS.	Pecora, 5 lb. cans..... 45 " 10 lb. cans..... 90 " 25 lb. cans..... 1 87	Quilt Frame.	1 lb. and heavier....per lb. 37c 2 lb. " " 38c 2 1/2 lb. " " 37c 3 lb. " " 40c 4 lb. " " 48c
BRAKES.	CHAIN AND CHAINS.	No. 30 Ball and Socket, 2 1/2" head.....per gross \$11 25 No. 50, Ball and Socket, 3 1/2" head.....per gross 12 25	Quilt Frame.
Hay Rack.	Breast Chains.	Hose.	All sizes.....87 1/2%
Wenzelmann's No. 1, per doz. sets.....\$18 00	With Slide..... 5 00 Without Slide.... 4 60	Sherman's, brass, 3/8-in., per doz. 48c	COTTERS, SPRING.
Wenzelmann's No. 2, per doz. sets..... 19 20	Doubleslack ...doz. pairs, \$8 50	Double, brass, 3/8-in., per doz. 1 20	COUPLINGS, HOSE.
Shelf.	With Covert Snaps. " 5 80	Morgan's Grapevine per doz. \$45 00	COVERS, WAGON—See Tents.
Wrought Steel.....40%			CRADLES, GRAIN.

CRAYONS—See Chalk.		ELBOWS—Conductor Pipe.		Wood Pails.		HANGERS.	
CUTTERS.		Galvanized Steel, Tin and Terne, Round Corrugated.		Frazer's, 15lb \$1.00; 25lb \$1.50 each.		Barn Door.	
Glass, Woodward 40%		Size. Doz.		Hub Lightning, 15lb 90c; 25lb \$1.21 each.		U. S. Roller Bearing....12½%	
Meat.		2-inch 50%		Matchless.....12½%		Warehouse Tandem, No. 44.....33½%	
Enterprise—Nos. 5 10 12		3-inch 50%		Conductor P.		Iwan's Perfection.....45%	
Each... \$2 50 \$4 25 \$3 75		4-inch 50%		Eave Trough.		All sizes, 5" or smaller.....per gross \$8 80 Net	
Nos. 22 32		5-inch 50%		All sizes, larger than 5".....per gross, 5 00."		Garage Door.	
" 6 50 8 50		6-inch 50%		Right Angle.....50&10%		Sliding Folding.....50%	
Pipe.		EMERY, TURKISH.		Receding.....50%		Receding.....50%	
Saunders', No. 1 2 3		Out of market at present time.		Parlor Door.		Acme.....per set, \$2 75	
Each\$1 85 2 75 6 75		Domestic, lb.10c		Ives' Improved....." 3 40		Lane's Standard....." 3 50	
Slaw and Kraut. Per doz.		EYES.		Lane's New Model....." 3 10		Le Roy Noiseless.....40&10%	
4-knife Kraut.....\$20 00-55 00		Bright Wire Screw—See Woods, B. W.		Richards.....25%		Richards.....25%	
3-knife Kraut, 8x27 in. 13 00-18 00		Drifting Pick60, 10 & 5%		Advance.....40&10%		Advance.....40&10%	
1-knife Slaw2 50		Hooks and Eyes—		HASPS.		HATCHETS.	
2-knife Slaw3 00		Brass, 1½" No. 60, per gross\$3 50		Hinge, Wrought, Add 50% to list With Staples—See Staples.		Crescent.....50%	
Washer11 00		Iron, 1½" No. 60, per gross 1 60		Barrel Shot Guns....Net Prices		Cast Claw.....per doz. \$1 50@1 85	
DAMPERS, STOVE PIPE.		FASTENERS, STORM SASH.		Double Barrel, Hammerless		Cast Shingling....." 1 50@1 85	
Ideal		FILES AND RASPS.		Germantown.....7½%		Germantown.....7½%	
3"\$1 00		Delta30%		HAY KNIVES.		HAY RACK BRACKETS.	
4"1 05		Swiss.....List plus 25%		See Knives.		Wenzleman's No. 1.....per doz. sets, \$18 00	
5"1 15		Utility....." net.		Wenzleman's No. 2.....per doz. sets, 19 20		Wenzleman's No. 1.....per doz. sets, \$18 00	
6"1 25		Nicholson's—		HAY RACK BRACKETS.		Wenzleman's No. 2.....per doz. sets, 19 20	
7"2 20		American5-10%		Crescent.....50%		Crescent.....50%	
8"3 75		Arcade50-10-7½%		Cast Claw.....per doz. \$1 50@1 85		Cast Claw.....per doz. \$1 50@1 85	
10"6 00		Black Diamond40-10%		Cast Shingling....." 1 50@1 85		Cast Shingling....." 1 50@1 85	
DIES AND STOCKS		Eagle50-10-7½%		Germantown.....7½%		Germantown.....7½%	
Discount.....New List		Great Western50-10-7½%		HATCHETS.		Germantown.....7½%	
DIGGERS		Kearney & Foot50-10-7½%		Crescent.....50%		Crescent.....50%	
Post Hole		McClellan50-10-7½%		Cast Claw.....per doz. \$1 50@1 85		Cast Claw.....per doz. \$1 50@1 85	
Eureka.....per doz. \$14 50		Nicholson brand40-10-5%		Cast Shingling....." 1 50@1 85		Cast Shingling....." 1 50@1 85	
Iwan's Split Handle (Eureka)		J. Barton Smith50&2½%		Germantown.....7½%		Germantown.....7½%	
4-ft. Handle.....per doz. 15 00		X-F Swiss PatternNet List		HAY KNIVES.		HAY RACK BRACKETS.	
7-ft. ".....per doz. 20 00		Simonds'50%		See Knives.		Wenzleman's No. 1.....per doz. sets, \$18 00	
Iwan's Perfection (Atlas) per doz.16 50		Disston's50%		Wenzleman's No. 2.....per doz. sets, 19 20		Wenzleman's No. 2.....per doz. sets, 19 20	
Iwan's Hercules pattern per doz.18 00		Heller's60&10%		HAY RACK BRACKETS.		HAY RACK BRACKETS.	
See also Augers—Post Hole.		DOOR CHECKS—See Checks		Crescent.....50%		Crescent.....50%	
DOORS, SCREEN		Brad. Commonper doz. \$0 35		Cast Claw.....per doz. \$1 50@1 85		Cast Claw.....per doz. \$1 50@1 85	
½-in. 4-panel, painted Net Prices		FILES AND RASPS.		Cast Shingling....." 1 50@1 85		Cast Shingling....." 1 50@1 85	
1½-in. 4-panel, painted "		Barley. Steel, new list.....New Prices		Germantown.....7½%		Germantown.....7½%	
1½-in. 3-panel, natural pine, fancy "		FORKS.		Hinges only " 4 75 5 50 8 00		Hinges only " 4 75 5 50 8 00	
DOOR HANGERS—See Hangers		Hay. 2-tine.....New prices		Latches only 1 90 1 90		Latches only 1 90 1 90	
DRILLS		3-tine.....New prices		SCREEN DOOR.		Chicago.....Add 12½% to list	
Blacksmiths' Twist. (New List)40%		4-tine.....New prices		Columbia Dbl. Acting.....40&10&5@		Columbia Dbl. Acting.....40&10&5@	
Breast.		DiggingNew prices		Gem25%		Gem25%	
Millers Falls No. 12, each \$46 00		ScoopNew prices		Ideal Detachable, per gro. \$11 00		Ideal Detachable, per gro. \$11 00	
" " 112, " 26 00		HEADER.		Matchless40%		Matchless40%	
Hand.		Header. 3-tine.....New prices		New Ideaper gro. \$7 20		New Ideaper gro. \$7 20	
Goodell's Automatic.		4-tine.....New prices		Oxford20%		Oxford20%	
Nos. 01 03		Manure. 4-tine.....New prices		WROUGHT IRON.		WROUGHT IRON.	
Per doz. 12 00 14 40		FREEZERS—ICE CREAM		New Lists.....		New Lists.....	
Goodell's Single Gear, per doz.15 75		White Mountain 1-quart....@		Light Strap Hinges.....5&5%		Light Strap Hinges.....5&5%	
Goodell-Pratt No. 4½ per doz. list, less....30%		" " 2 "@		Heavy Strap Hinges...20&7½%		Heavy Strap Hinges...20&7½%	
Goodell-Pratt No. 379 per doz. list, less....30%		" " 4 "@		Light T Hinges...List plus 45%		Light T Hinges...List plus 45%	
Reciprocating.		Arctic. 1 "@		Heavy T Hinges...List plus 45%		Heavy T Hinges...List plus 45%	
Goodell's.....per doz. 26 00		" " 6 "@		Extra Heavy T Hinges. 15&5%		Extra Heavy T Hinges. 15&5%	
DRIVERS, SCREW		GAUGES.		HANDLES.		HANDLES.	
StandardNets		Cream Pail. Fairmount.....per doz. \$3.75		Auger. Common Assorted per doz. \$0 75		Auger. Common Assorted per doz. \$0 75	
Lock Ferrule		Marking, Mortise, etc.....Nets		Pratt's Adjustable, Nos. 1 & 2, per doz.....6 00		Pratt's Adjustable, Nos. 1 & 2, per doz.....6 00	
Champion		Wire. Disston's25%		Ives' Adjustable...per set 1 35		Ives' Adjustable...per set 1 35	
Champion Pattern		GIMLETS.		Axe. 30%		Axe. 30%	
Clark's Interchangeable		Discount35@40%		Chisel. Hickory, Tanged, Firmer, Assorted, 55c; Large, 85c per doz.		Chisel. Hickory, Tanged, Firmer, Assorted, 55c; Large, 85c per doz.	
Edison		GLUE.		Hickory, Socket Firmer, Assorted, 70c; Large size, 80c per doz.		Hickory, Socket Firmer, Assorted, 70c; Large size, 80c per doz.	
Reed's Lightning		Bulk. B Amber.....per lb. 35c		Hammer. Adze Eye...per doz. 40c to \$1 00		Hammer. Adze Eye...per doz. 40c to \$1 00	
Goodell's Spiral		A White....." 40c		Blacksmiths' " 45c@1 00		Blacksmiths' " 45c@1 00	
Yankee Ratchet		H. S. Amber....." 32c		Machinists' " 50c@1 00		Machinists' " 50c@1 00	
" Spiral		Liquid.		Hay and Manure Fork.....25%		Hay and Manure Fork.....25%	
EAVES, TROUGH		Army & Navy.....40%		HOLES.		HOLES.	
50% off Standard List.		Le Page's—		GardenNet		GardenNet	
ELBOWS—Stove Pipe		List "A".....37½%		Grub. ExtraNew prices		Grub. ExtraNew prices	
1-piece Corrugated, Uniform		List "B".....33½%		Hazel.....per doz. New prices		Hazel.....per doz. New prices	
Doz.		List "C".....25 %		Ladies' and Boys' ...New prices		Ladies' and Boys' ...New prices	
6-inch\$2 25		GREASE, AXLE.		MortarNew prices		MortarNew prices	
6-inch2 30							

Box.	KETTLES.												Clothes.			Picture.							
Inch.....	5	7	10	12	Brass	15%	60-ft. Jute.....	per doz.	\$0	95	Brass Heads	25%											
Per doz.	\$2 50	2 75	3 25	3 55	Caudron	40&5%	60-ft. Sisal.....	"	40		Brads	50&%											
Bush.	Common Axe Handle, per doz.\$22 00												Furniture.....List plus 15%			Picture.							
Chain.	KNIVES.												NAIL PULLERS.			NAIL SETS.							
Inch.....	1 1/4&5/16	3/4	7/16	15/16	Beet Topping.		Bricks.....per crate 42c		See Pullers.			NAIL SETS.			NETTING, POULTRY.								
Pr 100	\$7 60	8 10	9 75	11 50	Clyde, 9-in. Scimitar Blade, doz.....	\$3 85	Barn Door.		See Sets.			NETTING, POULTRY.			Galvanized before weaving...50%								
Clothes Line.	Japanese.....per doz. 48c@1 40 Galvanized....." 75c@2 50												Galvanized after weaving...40%			Galvanized before weaving...50%							
Coat and Hat.	Common Wire per gro. 1 25-1 65												NIPPERs.			NIPPERs.							
Conductor.	Iwan's Tinned Sickle.....List												End Cutting.			End Cutting.							
Corn.	Common, riveted, painted redper doz. Nets Little Giant....."												Stubb's Pattern, Inches 5 6 Per dozen.....\$4 65 6 75			Swedish Side, Inches 5 6 Per dozen\$4 50 5 75							
Gate.	See Goods, Bright Wire.												Hoop.			Hoop.							
Grass.	Common Nos. 1 3 5 7 Per Doz...\$4 50 3 50 3 75 3 25												Heller's40&10% V. & B., No. 52, each.....\$2 25			Heller's40&10% V. & B., No. 52, each.....\$2 25							
Hammock.	With plate.....per doz. 1 10 With screw....." 1 00												NOZZLES.			NOZZLES.							
Lambrequin, or Drapery, per gro.....30c	Picture50%&50&10% Potato and Manure.....Nets												Hose.			Hose.							
Screw.	Brass70% (See Goods, Bright Wire.)												Magicper doz. \$9 50 Diamond			Diamond							
Seat Spring.....per lb. 5 1/2c	HOSE, GARDEN.												NUTS, HOT PRESSED.			NUTS, HOT PRESSED.							
COTTON COV. RUBBER HOSE.	Per ft. Guaranteed 3 ply 3/4 inch.....16 c 4 ply 3/4 inch.....18 1/2c 5 ply 3/4 inch.....13 1/2c												Square Tapped.			Square Tapped.							
High Grade Apache 1" guar. press. 400 lbs.....40c	Per ft. Guaranteed 3 ply 3/4 inch.....16 c 4 ply 3/4 inch.....18 1/2c 5 ply 3/4 inch.....13 1/2c												\$1.85 off per 100 lbs.			\$1.85 off per 100 lbs.							
HUSKERS.	Per ft. Guaranteed 3 ply 3/4 inch.....16 c 4 ply 3/4 inch.....18 1/2c 5 ply 3/4 inch.....13 1/2c												Hexagon Tapped.			Hexagon Tapped.							
Boss.	Per ft. Guaranteed 3 ply 3/4 inch.....16 c 4 ply 3/4 inch.....18 1/2c 5 ply 3/4 inch.....13 1/2c												\$1.85 off per 100 lbs.			\$1.85 off per 100 lbs.							
IRON, PIG.	See Metals.—First column.												OILERS.			OILERS.							
IRONs.	HUSKERS.												CHASE PATTERN.			CHASE PATTERN.							
Curling.	Per ft. Guaranteed 3 ply 3/4 inch.....16 c 4 ply 3/4 inch.....18 1/2c 5 ply 3/4 inch.....13 1/2c												Brass and Copper.....10% Zinc			Brass and Copper.....10% Zinc							
Nos. B E	Per ft. Guaranteed 3 ply 3/4 inch.....16 c 4 ply 3/4 inch.....18 1/2c 5 ply 3/4 inch.....13 1/2c												Engineers'.			Engineers'.							
Per doz.....New Nets	Per ft. Guaranteed 3 ply 3/4 inch.....16 c 4 ply 3/4 inch.....18 1/2c 5 ply 3/4 inch.....13 1/2c												Tinper doz. \$7 00@ 9 00			Tinper doz. \$7 00@ 9 00							
IRON, PIG.	See Metals.—First column.												Machine.			Machine.							
IRONs.	HUSKERS.												Commonper doz. \$0 85			Commonper doz. \$0 85							
IRON, PIG.	See Metals.—First column.												OPENERS.			OPENERS.							
IRONs.	HUSKERS.												Box.			Box.							
Step.	Per ft. Guaranteed 3 ply 3/4 inch.....16 c 4 ply 3/4 inch.....18 1/2c 5 ply 3/4 inch.....13 1/2c												See Box Chisels.			See Box Chisels.							
IRON, PIG.	See Metals.—First column.												Can.			Can.							
IRONs.	HUSKERS.												Delmonicoper doz. \$1 30 Never Slip....." 65			Delmonicoper doz. \$1 30 Never Slip....." 65							
IRON, PIG.	See Metals.—First column.												Crates.			Crates.							
IRONs.	HUSKERS.												V. & B.per doz. \$7 25-11 00			V. & B.per doz. \$7 25-11 00							
IRON, PIG.	See Metals.—First column.												OUTFIT'S, COBBLING.			OUTFIT'S, COBBLING.							
IRONs.	HUSKERS.												Combinationper doz. \$1 00 Economy" 8 50 Family" 14 50			Combinationper doz. \$1 00 Economy" 8 50 Family" 14 50							
IRON, PIG.	See Metals.—First column.												PAILS.			PAILS.							
IRONs.	HUSKERS.												Cream.			Cream.							
Step.	Per ft. Guaranteed 3 ply 3/4 inch.....16 c 4 ply 3/4 inch.....18 1/2c 5 ply 3/4 inch.....13 1/2c												14-qt. without gauge, per doz. \$9 50			14-qt. without gauge, per doz. \$9 50							
IRON, PIG.	See Metals.—First column.												18-qt. without gauge, per doz. \$11 00			18-qt. without gauge, per doz. \$11 00							
IRONs.	HUSKERS.												20-qt. without gauge, per doz. \$11 75			20-qt. without gauge, per doz. \$11 75							
IRON, PIG.	See Metals.—First column.												MILLS, COFFEE.			MILLS, COFFEE.							
IRONs.	HUSKERS.												Enterprise16 2-3% Parker50%&5% Arcade40-10%			Enterprise16 2-3% Parker50%&5% Arcade40-10%							
IRON, PIG.	See Metals.—First column.												MAULS.			MAULS.							
IRONs.	HUSKERS.												Iron, lbs.... 10 13 16 18 Per doz....Prices on Application			Iron, lbs.... 10 13 16 18 Per doz....Prices on Application							
IRON, PIG.	See Metals.—First column.												Wood Face, lb... 10 12 14 Per doz....Prices on Application			Wood Face, lb... 10 12 14 Per doz....Prices on Application							
IRONs.	HUSKERS.												Wood Choppers'.			Wood Choppers'.							
IRON, PIG.	See Metals.—First column.												Lake Superior & Oregon pat....40%&5%			Lake Superior & Oregon pat....40%&5%							
IRONs.	HUSKERS.												MEASURES.			MEASURES.							
IRON, PIG.	See Metals.—First column.												Galvanized, doz....Nets			Galvanized, doz....Nets							
IRONs.	HUSKERS.												Japanned, doz....Nets			Japanned, doz....Nets							
IRON, PIG.	See Metals.—First column.												Transom.			Transom.							
IRONs.	HUSKERS.												Payson's55%			Payson's55%							
IRON, PIG.	See Metals.—First column.												LINES.			LINES.							
IRONs.	HUSKERS.												Chalk.			Chalk.							
IRON, PIG.	See Metals.—First column.												Twisted in 20-ft. hanks.			Twisted in 20-ft. hanks.							
IRONs.	HUSKERS.												Nos. 4 6 7 8 9										

PAPERS.		Fencing.		PUNCHES.		SAWS.	
Apple.		Black Bull	All Nets	Conductors.		Band.	E. C. Atkins & Co.
Goodell's	per doz. \$10.80	Farmer's Choice	All Nets	No. 22	per doz. \$3.00	Prices on applic'n	Dibston's
Turntable	11.40	Russell's	All Nets	Machine	per lb. 25	Prices on applic'n	Dibston's
White Mountain..	" 8.40			Saddlers'.		Buck.	Dibston's
Heading, No. 78..	" 11.40			Common	per doz. 1.50 to 5.00	Prices on applic'n	Jackson's
Potato.		Bernard's	New Prices	Revolving Spring.		Butchers'.	E. C. Atkins & Co.
Goodell's Maratoga, 10%		Lodi	New Prices	Burns, No. 10	per doz. \$6.25	Prices on applic'n	Dibston's
in. doz. 6.50		Paragon	New Prices	" No. 40	" 12.00	Prices on applic'n	Jackson's
Goodell's Maratoga, 5 in.				" No. 60	" 16.00	New nets	
doz. 6.50							
PICKS.							
Edge Eye Iron..... 22 1/2%							
Drifting and Poll Picks... 22 1/2%							
Plumb, Railroad..... 22 1/2%							
Surface..... 22 1/2%							
PINCERS.							
Carpenters', cast steel,							
No. 6 8 10 12							
Each. \$0.63 .80 1.05 1.15							
Blacksmiths'..... 45%							
Heller's..... 40%							
PINS							
Clothes.							
Common	per box of 5 gro. \$0.95						
Picket.							
Fluted, 15-in.....per doz. \$1.10							
Fluted, 21-in..... "	1.60						
Spiral	1.90						
PIPE.							
Conductor.							
Plain Round and Round Corrugated.							
20 Gauge..... 50%							
22 "..... 40%							
26 "..... 30%							
24 "..... List							
Square Corrugated A and B and Octagon.							
20 Gauge..... 40%							
28 "..... 35%							
26 "..... 25%							
24 "..... List							
Galvanised Tin cans, tin-plate, C. H. Iron, Tinware Metal, Charcoal Iron and Keystone C. H.							
Plain Round and Round Corrugated.							
28 Gauge..... 40%							
26 "..... 30%							
24 "..... List							
Square Corrugated A and B Polygon and Octagon.							
28 Gauge..... 35%							
26 "..... 35%							
24 "..... List							
14 and 16-in. Copper, all sizes..... List							
Portion Elbows.							
Galvanized and Tin-coated Steel.							
1-inch..... 35%							
1 1/2-inch..... 35%							
1 1/4-inch..... 35%							
2-inch..... 35%							
Tubing..... 25%							
Discounts on Round apply on sizes 2-inch to 4-inch inclusive.							
Freight allowed on 15 dozen or more, to all points where freight rate does not exceed \$1.00 per 100 lbs. Less than 15 dozen F. O. B. Factory.							
Terms: 30 days net, 2% ten days.							
Standard Gauge Conductor Pipe, plain or corrugated.							
Not Nested..... 35-5%							
Nested solid..... 40%							
Stove.	per 100						
20 Gauge..... \$19.00	Joint						
" 4-inches..... 19.50							
" 5-inches..... 20.25							
" 6-inches..... 21.00							
" 7-inches..... 22.00							
T-Joint Made up.							
6-inches..... per 100 \$60.00							
Furnace Pipe.							
Double Wall Pipe and Fittings..... 20%							
Single Wall Pipe, Round Pipe Fittings..... 15%							
Galvanized and Black Iron Pipe, Sheet, etc..... 15%							
PLANES.							
Stanley Iron Bench..... net							
PLATES, TIN.							
See Metals in Column 1.							
PLIERS.							
Giant, Button's—Nets.							
Cutting.							
Bernard's	New Prices						
Lodi	New Prices						
Paragon	New Prices						
PICKS.							
Fencing.							
Black Bull	All Nets						
Farmer's Choice	All Nets						
Russell's	All Nets						
Flat and Round Nose.							
Bernard's	New Prices						
Lodi	New Prices						
Paragon	New Prices						
Conductors.							
No. 22	per doz. \$3.00						
Machine	per lb. 25						
Saddlers'.							
Common	1.50 to 5.00						
Revolving Spring.							
Burns, No. 10	per doz. \$6.25						
" No. 40	" 12.00						
" No. 60	" 16.00						
Tinners'.							
Hollow	Net List						
Hold	each. 10c						
PUTTY.							
Strictly pure	per 100 lbs. \$4.25						
RAIL.							
Barn Door.							
Matchless, 1-in..... 5c							
Matchless, 1 1/2-in..... 7c							
Storm King	5c						
PLUMBS AND LEVELS.							
Common	Net						
Cook's	40%						
Davis' Iron..... 25%							
Davis' Inclinometer..... 15%							
POINTERS, SPOKE.							
Burns, No. 1	per doz. \$8.00						
" No. 2	" 10.00						
POKERS, STOVE.							
Wt. Steel, stiff or bent,	per doz. \$0.75						
Nickel Plated, coil handle	1.10						
POLE.							
Metal.							
Wizard, 6 oz... per gross \$18.00							
" 1/2-pt. " " 20.40							
" 1-pt. " " 36.00							
" 1-qt. " " doz. 6.00							
" 16-oz. " " 10.00							
" 1-gal. " " 18.00							
SHOVEL.							
Per gross							
Black Eagle Paste 5-in. \$13.80							
" " 1/2-lb. 17.40							
" " 1-lb. 31.20							
" " 5-lbs. 5.25							
Black Eagle Liquid, 6-oz. per gross							
Black Kid Paste, 5 lbs. per case							
Black Jack Liquid, 1/2-pt. per gross							
Black Jack Paste, No. 10. per gross							
POWDER.							
See Ammunition.							
PRESSES, FRUIT AND JELLY.							
Enterprise Manufacturing Co. 25%							
PRIMERS.							
See Ammunition.							
PULLERS.							
Cork.							
Daisy	each. \$2.10						
Phoenix	1.40						
Quick and Easy	2.70						
Nail.							
Giant	per doz. \$14.50						
Never-Slip	" 17.00						
PULLEYS.							
Awning—Jap'd	10%						
Clothes Line	10%						
Hay Fork.							
Iron Wheel, 5-in. per doz. 2.50							
Wood Wheel, 6-in. " 2.65							
Wood Wheel, 6-in. pass knot	3.00						
PUMPS.							
Pitcher Spout.							
Nos. 1 2 3 4	Nets						
Each	Nets						
PURE MANILA.							
1st Quality, base... per lb. 28 1/2c							
Hardware Grade... per lb. 27 1/2c							
RULES.							
Prices on application							
Midget Junior..... \$1.75							
New Misty	" 6.00						
Crescent	" 6.50						
SPRAY.							
Lufkin's Hickory Board	"						
Lufkin's Log	"						
Lufkin's Boxwood	"						
Lufkin's Zigzag	"						
SAWS.							
Band.							
E. C. Atkins & Co.							
Dibston's							
Prices on applic'n							
Buck.							
Dibston's							
Prices on applic'n							
Butchers'.							
E. C. Atkins & Co.							
Dibston's							
Prices on applic'n							
Circular.							
E. C. Atkins & Co.							
Dibston's							
Prices on applic'n							
Compass.							
E. C. Atkins & Co.							
Dibston's							
Prices on applic'n							
Coping.							
E. C. Atkins & Co.							
Dibston's							
Prices on applic'n							
Cross-Cut.							
E. C. Atkins & Co.							
Dibston's							
Prices on applic'n							
Flooring.							
E. C. Atkins & Co.							
Dibston's							
Prices on applic'n							
Hack.				</			

ADVERTISERS' INDEX

CLASSIFIED INDEX

ALPHABETICAL LIST

American Sheet & Tin Plate Co.	51	Asbestos Sheets	Files	Metals—Perforated
American Steel & Wire Co.	54	Jack Corporation, A. W., Lockport, New York	Heller Bros. Co., Newark, N. J.	Harrington & King Perforating Co., Chicago, Ill.
Ashton Mfg. Co.	54	Bale Ties	Flux—Aluminum	Millboard
Bauman Co., Inc., A. M.	53	American Steel & Wire Co., Chicago, Ill.	Roesch, Geo. E., Aurora, Ill.	Jack Corporation, A. W., Lockport, N. Y.
Berger Brothers Co.	53	Pittsburgh Steel Co., Pittsburgh, Pa.	Furnaces—Soldering	Miters
Bernz Otto	54	Ryerson & Son, Joseph T., Chicago, Ill.	Ashton Mfg. Co., Newark, N. J.	Friedley-Voshardt Co., Chicago, Ill.
Bertsch & Co.	52	Bolts and Nuts	Bernz, Otto, Newark, N. J.	Nails—Slating
Brier Hill Steel Co.	51	Kirk-Latty Mfg. Co., Cleveland, Ohio	Burgess Soldering Furnace Co., Columbus, Ohio	Nails—Wire
Bullard & Gormley Co.	59	Bolts—Stove	Clayton & Lambert Mfg. Co., Detroit, Mich.	American Steel & Wire Co., Chicago, Ill.
Burgess Soldering Furnace Co.	54	Brakes—Cornice	Quick Meal Stove Co., St. Louis, Mo.	Pittsburgh Steel Co., Pittsburgh, Pa.
Burton Co., W. J.	54	Brass and Copper	Turner Brass Works, Sycamore, Ill.	Ornaments—Sheet Metal
Caldwell Mfg. Co.	56	Ceiling—Metal	Handles—Boiler	Patterns—Furnace
Central Pattern Co.	13	Bertsch & Co., Cambridge City, Ind.	Berger Bros. Co., Philadelphia, Pa.	Central Pattern Co., Quincy, Ill.
Central Stove & Furnace Repair Co.	13	Dreis & Krump Mfg. Co., Chicago, Ill.	Heaters—School Room	Patterns—Machinery
Clark-Smith Hardware Co.	51	Niagara Machine & Tool Works, Buffalo, N. Y.	Peerless Foundry Co., Indianapolis, Ind.	Central Pattern Co., Quincy, Ill.
Clayton & Lambert Mfg. Co.	54	Cornices	Standard Furnace & Supply Co., Omaha, Neb.	Patterns—Stove
Cleveland & Buffalo Transit Co.	13	Copé-Swift Co., Inc.	Heaters—Warm Air	Central Pattern Co., Quincy, Ill.
Cleveland Castings & Pattern Co.	13	Heller Bros. Co., Milwaukee, Corrugating Co., Milwaukee, Wis.	Forest City Fdy. & Mfg. Co., Cleveland, Ohio	Cleveland Castings Pattern Co., Cleveland, Ohio
Coe Wrench Co.	57	Hemp & Co.	Hall-Neal Furnace Co., Indianapolis, Ind.	Cope-Swift Co., Inc., Detroit, Mich.
Cope-Swift Co., Inc.	13	Hess-Snyder Co., Chicago, Ill.	Henry Furnace & Fdy. Co., Cleveland, Ohio	Quincy Pattern Co., Quincy, Ill.
Cortright Metal Roofing Co.	53	Hess-Snyder Co., W. J., Detroit, Mich.	Hess-Snyder Co., Massillon, Ohio	Vedder Pattern Works, Troy, N. Y.
Detroit Vapor Stove Co.	14	Hess-Snyder Co., W. J., Detroit, Mich.	Mahoning Foundry Co., Youngstown, Ohio	Pipes and Fittings—Furnace
Dover Wood Face & Lbr. Co.	13	Hess-Snyder Co., W. J., Detroit, Mich.	May-Fiebeger Furnace Co., Newark, Ohio	Henry Furnace & Fdy. Co., Cleveland, Ohio
Dreis & Krump Mfg. Co.	52	Hess-Snyder Co., W. J., Detroit, Mich.	Peerless Foundry Co., Indianapolis, Ind.	Howes Co., S. M., Boston, Mass.
Forest City Fdy. & Mfg. Co.	5	Hess-Snyder Co., W. J., Detroit, Mich.	Rybolt Heater Co., Ashland, Ohio	Meyer & Bro. Co., F., Peoria, Ill.
Friedley-Voshardt Co.	51	Hess-Snyder Co., W. J., Detroit, Mich.	Schill Bros. Co., Crestline, Ohio	Michigan Safety Furnace Pipe Co., Detroit, Mich.
Hall-Neal Furnace Co.	6	Hess-Snyder Co., W. J., Detroit, Mich.	Schwab & Sons Co., R. J., Milwaukee, Wis.	Safety Interlocking Stove Pipe Co., Mt. Pleasant, Iowa
Harrington & King Perforating Co.	53	Hess-Snyder Co., W. J., Detroit, Mich.	Standard Furnace & Supply Co., Omaha, Neb.	Standard Furnace & Supply Co., Omaha, Neb.
Hart & Cooley Co.	9	Hess-Snyder Co., W. J., Detroit, Mich.	Tubular Heating & Ventilating Co., Philadelphia, Pa.	Stearns Register Co., Detroit, Mich.
Heller Bros. Co.	57	Hess-Snyder Co., W. J., Detroit, Mich.	XXth Century Heating & Ventilating Co., Akron, Ohio	Pipe and Fittings—Stove
Hemp & Co.	49	Hess-Snyder Co., W. J., Detroit, Mich.	Victor Stove Co., Salem, Ohio	Hemp & Co., St. Louis, Mo.
Henry Furnace & Fdy. Co.	3	Hess-Snyder Co., W. J., Detroit, Mich.	Waterloo Register Co., Waterloo, Iowa.	Howes Co., S. M., Boston, Mass.
Hess-Snyder Co.	7	Hess-Snyder Co., W. J., Detroit, Mich.	Horse Shoes	Meyer & Bro. Co., F., Peoria, Ill.
Hessler Co., H. E.	53	Waterloo Register Co., Waterloo, Iowa.	American Steel & Wire Co., Chicago, Ill.	Michigan Safety Furnace Pipe Co., Detroit, Mich.
Howes Co., S. M.	11	Ceilings—Metal	Jobbers—Hardware	Safety Interlocking Stove Pipe Co., Mt. Pleasant, Iowa
Hussey & Co., C. G.	51	Burton Co., W. J., Detroit, Mich.	Bullard & Gormley Co., Chicago, Ill.	Sullivan-Geiger Co., Indianapolis, Ind.
Hyfield Mfg. Co.	56	Friedley-Voshardt Co., Chicago, Ill.	Clark-Smith Hdw. Co., Peoria, Ill.	Pipe—Conductor
Jack Corp., A. W.	13	Milwaukee Corrugating Co., Milwaukee, Wis.	Machines—Crimping	Berger Bros. Co., Philadelphia, Pa.
Kimball Bros. Co.	49	Milwaukee Corrugating Co., Milwaukee, Wis.	Bertsch & Co., Cambridge City, Ind.	Burton Co., W. J., Detroit, Mich.
Kirk-Latty Mfg. Co.	13	Milwaukee Corrugating Co., Milwaukee, Wis.	Niagara Machine & Tool Wks., Buffalo, N. Y.	Clark-Smith Hdw. Co., Peoria, Ill.
Knoedler Frederick J.	52	Milwaukee Corrugating Co., Milwaukee, Wis.	Machines—Razor Blades	Friedley-Voshardt Co., Chicago, Ill.
Lalance & Grosjean Mfg. Co.	56	Burton Co., W. J., Detroit, Mich.	Hyfield Mfg. Co., New York, N. Y.	Hussey & Co., C. G., Pittsburgh, Pa.
Lufkin Rule Co.	56	Friedley-Voshardt Co., Chicago, Ill.	Machines—Stove Pipe	Polish—Stove, Metal, Enamel, Iron
Mahoning Foundry Co.	2	Milwaukee Corrugating Co., Milwaukee, Wis.	Hemp & Co., St. Louis, Mo.	Nickel Plate Stove Polish Co., Chicago, Ill.
May-Fiebeger Furnace Co.	5	Milwaukee Corrugating Co., Milwaukee, Wis.	Bertsch & Co., Cambridge City, Ind.	Posts—Steel Fence
Meyer & Bro. Co., F.	11	Milwaukee Corrugating Co., Milwaukee, Wis.	Niagara Machine & Tool Wks., Buffalo, N. Y.	American Steel & Wire Co., Chicago, Ill.
Michigan Safety Furnace Pipe Co.	10	Milwaukee Corrugating Co., Milwaukee, Wis.	Machines—Tinsmith	Punches
Milwaukee Corrugating Co.	60	Berger Bros. Co., Philadelphia, Pa.	Bertsch & Co., Cambridge City, Ind.	Niagara Machine & Tool Wks., Buffalo, N. Y.
Nat'l Cash Register Co.	55	Burton Co., W. J., Detroit, Mich.	Dreis & Krump Mfg. Co., Chicago, Ill.	Whitney Metal Tool Co., Rockford, Ill.
Niagara Machine & Tool Works	52	Clark-Smith Hardware Co., Peoria, Ill.	Hemp & Co., St. Louis, Mo.	Whitney Mfg. Co., W. A., Rockford, Ill.
Northwestern Stove Repair Co.	13	Rock Island Mtg. Co., Peoria, Ill.	Knoedler, Frederick J., Philadelphia, Pa.	Ranges—Combination Gas & Coal
Peck, H. E.	49	Rock Island Register Co., Milwaukee, Wis.	Black Silk Stove Polish Works, Sterling, Ill.	Quick Meal Stove Co., St. Louis, Mo.
Peerless Foundry Co.	7	Roesch, Geo. E.	Schill Bros. Co.,	Raspas
Pittsburgh Steel Co.	56	Rybolt Heater Co.	St. Louis Technical Institute.	Heller Bros. Co., Newark, N. J.
Quick Meal Stove Co.	2	Ryerson & Son, Joseph T.	Sullivan-Geiger Co.,	
Quincy Pattern Co.	13	Safety Interlocking Stove Pipe Co.	Sykes Co., The.	
Republic Electric Lamp Co.	57	Republic Electric Lamp Co., Moline, Ill.	Towner, F. A.	
Rock Island Mtg. Co.	57	Schwab & Sons Co., R. J.	Tubular Heat & Vent. Co.	
Rock Island Register Co.	9	Standard Furnace & Supply Co.	Tuttle & Bailey Mfg. Co.	
Roesch, Geo. E.	49	Standard Ventilator Co.	Vedder Pattern Works.	
Rybolt Heater Co.	5	Stearns Register Co.	Viking Shear Co.	
Ryerson & Son, Joseph T.	53	St. Louis Technical Institute.	Waterloo Register Co.	
Safety Interlocking Stove Pipe Co.	11	Sullivan-Geiger Co.	Whitney Mfg. Co., W. A.	
Schwab & Sons Co., R. J.	4	Sykes Co., The.	Whitney Metal Tool Co.	
Standard Furnace & Supply Co.	4	Towner, F. A.	Whitney Mfg. Co., W. A.	
Standard Ventilator Co.	54	Tubular Heat & Vent. Co.	XXth Century Heat & Vent. Co.	
Stearns Register Co.	8	Turner Brass Works.	XXth Century Heat & Vent. Co.	
St. Louis Technical Institute.	49	Turner Brass Works.	Victor Stove Co.	
Sullivan-Geiger Co.	49	Tuttle & Bailey Mfg. Co.	Viking Shear Co.	
Sykes Co., The.	54	Vedder Pattern Works.	Waterloo Register Co.	
Towner, F. A.	49	Viking Shear Co.	Whitney Mfg. Co., W. A.	
Tubular Heat & Vent. Co.	6	Waterloo Register Co.	Whitney Metal Tool Co.	
Tuttle & Bailey Mfg. Co.	9	Whitney Mfg. Co., W. A.	Whitney Mfg. Co., W. A.	
XXth Century Heat & Vent. Co.	6	Whitney Metal Tool Co.	Whitney Mfg. Co., W. A.	
Vedder Pattern Works.	13	Whitney Metal Tool Co.	Whitney Mfg. Co., W. A.	
Victor Stove Co.	6	Whitney Metal Tool Co.	Whitney Mfg. Co., W. A.	
Viking Shear Co.	52	Whitney Metal Tool Co.	Whitney Mfg. Co., W. A.	
Waterloo Register Co.	1	Whitney Metal Tool Co.	Whitney Mfg. Co., W. A.	
Whitney Mfg. Co., W. A.	52	Whitney Metal Tool Co.	Whitney Mfg. Co., W. A.	
Whitney Metal Tool Co.	52	Whitney Metal Tool Co.	Whitney Mfg. Co., W. A.	

Registers—Shields Hall-Neal Furnace Co., Indianapolis, Ind.	Sheets—Black and Galvanized American Sheet & Tin Plate Co., Pittsburgh, Pa.	Tiles and Shingles—Metal Burton Co., W. J., Detroit, Mich.
Registers—Cash National Cash Register Co., Dayton, Ohio.	Brier Hill Steel Co., Youngstown, Ohio Knoedler, Frederick J., Philadelphia, Pa.	Cortright Metal Roofing Co., Philadelphia, Pa. Milwaukee Corrugating Co., Milwaukee, Wis.
Registers—Warm Air Hart & Cooley Co., New Britain, Conn.	Sheets—Blue Annealed Brier Hill Steel Co., Youngstown, Ohio	Tin—Perforated Harrington & King Perforating Co., Chicago, Ill.
Henry Furnace & Fdy. Co., Cleveland, Ohio	Sheets—Planished Sykes Co., The, Chicago, Ill.	Tinplate American Sheet & Tin Plate Co., Pittsburgh, Pa.
Rock Island Register Co., Rock Island, Ill.	Sheets—Steel Ryerson & Sons, Joseph T., Chicago, Ill.	Tools—Carpenters' Lufkin Rule Co., Saginaw, Mich.
Standard Furnace & Supply Co., Omaha, Neb.	Skylights Burton Co., W. J., Detroit, Mich.	Tools—Sheet Metal Bertsch & Co., Cambridge City, Ind.
Stearns Register Co., Detroit, Mich.	Snips—Tinsmiths Niagara Machine & Tool Wks., Buffalo, N. Y.	Dreis & Krump Mfg. Co., Chicago, Ill.
Tuttle & Bailey Mfg. Co., Chicago, Ill.	Solder Allen Co., Inc., L. B., Chicago, Ill.	Niagara Machine & Tool Wks., Buffalo, N. Y.
Waterloo Register Co., Waterloo, Iowa.	Solder—Aluminum Roesch, Geo. E., Aurora, Ill.	Ryerson & Son, Joseph T., Chicago, Ill.
Repairs—Furnace Central Stove & Furnace Repair Co., Chicago, Ill.	Soldering Fluid Allen Co., L. B., Chicago, Ill.	Viking Shear Co., Erie, Pa.
Hessler Co., H. E., Syracuse, N. Y.	Soldering—Furnaces Ashton Mfg. Co., Newark, N. J.	Whitney Mfg. Co., W. A., Rockford, Ill.
Northwestern Stove Repair Co., Chicago, Ill.	Burgess Soldering Furnace Co., Columbus, Ohio	Whitney Metal Tool Co., Rockford, Ill.
Rivets—Stove Kirk-Latty Mfg. Co., Cleveland, Ohio	Clayton & Lambert Mfg. Co., Detroit, Mich.	Tools—Tinsmiths' Bertsch & Co., Cambridge City, Ind.
Roasters Lalance & Grosjean Mfg. Co., Chicago, Ill.	Quick Meal Stove Co., St. Louis, Mo.	Dreis & Krump Mfg. Co., Chicago, Ill.
Rolls—Forming Bertsch & Co., Cambridge City, Ind.	Turner Brass Works, Sycamore, Ill.	Howes Co., S. M., Boston, Mass.
Roof—Flashing Hessler Co., H. E., Syracuse, N. Y.	Specialties—Hardware Caldwell Mfg. Co., Rochester, N. Y.	Knoedler, Frederick J., Philadelphia, Pa.
Roofing—Iron and Steel American Sheet & Tin Plate Co., Pittsburgh, Pa.	Statuary Friedley-Voshardt Co., Chicago, Ill.	Niagara Machine & Tool Wks., Buffalo, N. Y.
Brier Hill Steel Co., Youngstown, Ohio	Sticks—Soldering Allen Co., Inc., L. B., Chicago, Ill.	Ryerson & Son, Joseph T., Chicago, Ill.
Burton Co., W. J., Detroit, Mich.	Stock Waterers Rock Island Mfg. Co., Rock Island, Ill.	Viking Shear Co., Erie, Pa.
Cortright Metal Roofing Co., Philadelphia, Pa.	Stoves and Ranges Quick Meal Stove Co., St. Louis, Mo.	Whitney Mfg. Co., W. A., Rockford, Ill.
Friedley-Voshardt Co., Chicago, Ill.	Schill Bros. Co., Crestline, Ohio	Whitney Metal Tool Co., Rockford, Ill.
Milwaukee Corrugating Co., Milwaukee, Wis.	Stoves—Gasoline and Kerosene Detroit Vapor Stove Co., Detroit, Mich.	Torches Ashton Mfg. Co., Newark, N. J.
Sykes Co., The, Chicago, Ill.	Quick Meal Stove Co., St. Louis, Mo.	Bernz, Otto, Newark, N. J.
Rubbish Burners Hart & Cooley Co., New Britain, Conn.	Transit Companies Cleveland & Buffalo Transit Co., Cleveland, Ohio	Burgess Soldering Furnace Co., Columbus, Ohio
Rules Lufkin Rule Co., Saginaw, Mich.	Ventilators Basman Co., Inc., A. M., Detroit, Mich.	Clayton & Lambert Mfg. Co., Detroit, Mich.
Sash Balances Caldwell Mfg. Co., Rochester, N. Y.	Stock Waterers Rock Island Mfg. Co., Rock Island, Ill.	Standard Ventilator Co., Lewisburg, Pa.
Schools — Sheet Metal Pattern Drafting St. Louis Technical Institute, St. Louis, Mo.	Stoves and Ranges Quick Meal Stove Co., St. Louis, Mo.	Ventilators—Ceiling Hart & Cooley Co., New Britain, Conn.
Screens—Perforated Metal Harrington & King Perforating Co., Chicago, Ill.	Sticks—Soldering Allen Co., Inc., L. B., Chicago, Ill.	Tuttle & Bailey Mfg. Co., Chicago, Ill.
Tapes Lufkin Rule Co., Saginaw, Mich.	Stove Pipe Reducer Sullivan-Geiger Co., Indianapolis, Ind.	Vises Rock Island Mfg. Co., Rock Island, Ill.
Tacks, Staples, Spikes American Steel & Wire Co., Chicago, Ill.	Tacks, Staples, Spikes American Steel & Wire Co., Chicago, Ill.	Pittsburgh Steel Co., Pittsburgh, Pa.

ADVERTISING
is the power of an idea multiplied.

¶ Other powers
lose by expansion.
Steam is power only when confined. Electricity radiated and diffused becomes nothing. Sound dies with distance. Great suns pale into invisible stars, and the power of light itself is lost in infinite space. But the strange power of advertising increases by expansion. Diffusion is its life. It grows by what it imparts.

¶ The advertised idea, to become a power, must be genuine, vital, and related to the function of a meritorious business; and the means of its furtherance must be well chosen.

¶ To choose well the means for the furtherance of your advertised idea, in order that it may become a power, in order that you may show its genuineness as a vital factor of your business, is not hard.

¶ A close perusal from cover to cover of this week's issue of AMERICAN ARTISAN AND HARDWARE RECORD
620 So. Michigan Ave.
Chicago, Illinois
will disclose abundant evidence of this fact.

WANTS AND SALES

For paid yearly subscribers, AMERICAN ARTISAN AND HARDWARE RECORD will insert under this head advertisements of not more than fifty words WITHOUT CHARGE. Employers wishing to secure employees, parties desiring to purchase or sell business, secure partners, or to exchange, etc., will find that these pages offer excellent opportunities to satisfy their wants. Clerks and tinsmiths looking for situations will find it to their advantage to use these columns. Those who respond to these announcements please mention that they "READ THE ADVERTISEMENT IN AMERICAN ARTISAN AND HARDWARE RECORD."

BUSINESS CHANCES

For Sale—15 good used hard coal heaters, Jewel, Favorite and Round Oaks, some used only one winter. Address Manley Hardware Co., Harvard, Illinois. 1-3t

For Sale—An up-to-date stock of stoves, hardware and tinware, invoiced from four to five thousand dollars. Located at Maysville, Kentucky. Mrs. W. F. Power, Maysville, Kentucky. 26-3t

For Sale—Quantity of sanitary indoor closets; also some top and bottom castings and patterns for same. Will sell the entire lot at a bargain. Beuret Heating Company, Auburn, Indiana. 26-3t

For Sale—A 22 Calibre high power savage rifle. Has not been shot to exceed 200 rounds and is in excellent condition, fitted with Syman rear sight. Address Geo. E. Bunker, Woodhull, Illinois. 2-3t

Lightning Rods—Big profits and quick sales to live dealers selling "DIDIE'S UNIVERSAL RODS." Our copper tests 99.96% pure. Prices are right—get our agency. L. K. Diddle Company, Marshfield, Wisconsin. V78-12-52t

For Sale—Sheet metal shop, doing a good business. We do \$5,000 worth of auto radiator work a year, and is still growing. Investigate. Reason for selling, rheumatism. Address J. W. Green, Redlands, Colorado. 26-3t

For Sale—Seven crates or 840 elbows 4" pln. rod No. 4 or 90%; three crates or 450 elbows 4" pln. rod No. 1 or 45%; elbows in original crates, slightly dulled in color because of storage. Address Geo. A. Van Landegend, Holland, Michigan. 1-3t

For Sale—A plumbing, heating and sheet metal business; only shop in town of 2,000, located in eastern Illinois, 100 miles south of Chicago. I do all of city tapping and plumbing work. Will lease or sell building. Address J. E. Fitzwater, Rossville, Illinois. 1-3t

For Sale—An old established metal and plumbing shop, in a thriving town of 2,500 mills and farming. No competition, busy all the year around. Work for three men. Reason too old to continue in business. Will pay to investigate. Address Chas. Schwenk, Cass Lake, Minnesota. 1-3t

For Sale—Hardware in Lyon County, Iowa. Old established business. Stock of \$8,000. Fixtures and tools, \$2,000. Good money making opportunity. Do plumbing and tinning. Town is planning to put in sewers. Best location. For cash only. Address reply B-3, care of AMERICAN ARTISAN AND HARDWARE RECORD, 620 South Michigan Avenue, Chicago, Illinois.

For Sale—Hardware business, located on State street, near the University; have been operating two stores, but have concluded to concentrate all efforts at one store; will reduce the stock to suit the purchaser and will rent or sell the building; if interested will show you books to convince you that it is possible to buy a growing business without paying a bonus; this is a rare opportunity and should be investigated at once. Wolff, Kubly & Hirsig Company, Madison, Wis. 2-3t

BUSINESS CHANCES

Wanted—1,200 to 1,500 feet good sound used cast-iron steam boiler. Address Manley Hardware Co., Harvard, Illinois. 1-3t

For Sale—Half interest in hardware and implement stock. Business located in Central Indiana. Reason for selling because of bad health. Address B-6, care of AMERICAN ARTISAN AND HARDWARE RECORD, 620 South Michigan Avenue, Chicago, Illinois. 2-3t

For Sale—Hardware, furniture and undertaking business. Best growing town in northern Nebraska. \$46,000 business in 1919. Can easily be increased. Splendid opportunity for the right man. New brick building 48 by 80. Fine location. Do not write unless you mean business. Lock Box 356, Spencer, Nebraska. 2-3t

For Sale—A sheet metal and heating shop, with or without building. Have always had more business than I could handle. Do general sheet metal work and steam and hot water heating and boiler repair work. Want \$3,000.00 for shop and \$8,000.00 for building. Present owner sick and must leave town immediately. Address Louis H. Verick, 3125 Indiana Avenue, Chicago, Illinois. 2-3t

Business Chance—A rare opportunity offered to inventors or prospective manufacturers. I have a two-story building in a village in Wisconsin which I would like to turn into a factory. It is located on two railroads and one interurban line and a well-settled farming community. If article manufactured will be useful to farmers, a considerable amount of stock can be sold here. The owner of the building is willing to work personally to get a factory started as well as finance it. Help can be secured here at reasonable wages. If interested write, what you have, to B-7, care of AMERICAN ARTISAN AND HARDWARE RECORD, 620 South Michigan Avenue, Chicago, Illinois. 2-3t

HELP WANTED

Wanted—First-class tinner. Steady employment. Phelps Hardware Company, Sterling, Illinois. 26-3t

Wanted—Tinner's helper and furnace man. Address A. C. Wolff, 1124 Greenleaf Avenue, Chicago, Ill. 2-1t

Wanted—Several tanners at once. For information write to Geo. J. Schwicker, Mankato, Minnesota. 1-3t

Wanted—Plumber and sheet metal worker. Steady position. Kindly address B-5, care of AMERICAN ARTISAN AND HARDWARE RECORD, 620 South Michigan Avenue, Chicago, Illinois. 1-3t

Wanted—Four sheet metal workers, steady work, \$10.00 per day for 8 hours. Open shop. Write or wire. Rays Sheet Metal Works, corner Oak and Virginia Street, Wichita Falls, Texas. 2-3t

Wanted at Once—An A-1 combination mechanic who is able to do plumbing, general heating, tin and sheet metal work. Steady job for the right man. A. L. Spradling, Hooperston, Illinois. 26-3t

Wanted—Tanners to work on furnaces and general tin work. Wages 85c an hour. Nine hour day. Address Wood Hardware Company, 115 East Milwaukee Street, Janesville, Wisconsin. 2-3t

Wanted—Two first class tanners or 2 men with ventilating and blow pipe experience. \$1.00 per hour, union shop. Address Foster Metal Products Company, 217 South 4th Street, Springfield, Illinois. 2-3t

Wanted—Clerk with some experience in hardware store. Would prefer one who can do some tin work. Steady employment all year around to right party. Address H. E. Flesher, Lexington, Illinois. 1-3t

Wanted—Boy who has had from one to two years' experience in the metal line to finish trade. Good opportunity for right boy. State wages desired. Southwick Metal Company, 1913 State Street, Granite City, Illinois. 26-3t

Wanted at Once—First class tinner and furnace man. Or combination tinner and plumber. Must be a steady man. State wages and whether single or married. Address Thorpe Hardware Company, Thorpe, Wisconsin. 2-3t

Wanted—A man who understands farm machinery, setting up and selling, and can do furnace work and ordinary tinsmith work, in a country hardware store. Steady job to the right man. H. D. Powers, Grand Rapids, Minnesota. 26-3t

HELP WANTED

Wanted—First class tanners and furnace men, \$1.00 per hour. Steady work. Address The Lindas Company, Kenosha, Wisconsin. 1-3t

Wanted—Three good tanners for roofing and gutter work and furnace installation. Address Forest City Hardware Company, 1105 Fourteenth Ave., Rockford, Illinois. 1-3t

Wanted—Good all around tanners and furnace men. Steady work all year around. Wages \$1.00 per hour. Phone or write. H. N. Schwery, Highland Park, Illinois. Phone 555. 1-3t

Wanted—Good sheet metal worker and furnace man. Steady job. Married man preferred. Kindly address B-4, care of AMERICAN ARTISAN AND HARDWARE RECORD, 620 South Michigan Avenue, Chicago, Illinois. 1-3t

Wanted at Once—First class sheet metal worker and furnace man. Must be a good all around man. \$1.00 per hour and steady work. Union shop. Address Standard Sheet Metal Work, corner Water and Genesee Street, Waukegan, Illinois. Phone 2101. 2-3t

Wanted—A good combination man to do plumbing, heating and tin work. Prefer man who will estimate the jobs. Want man with some hardware experience. Married man preferred. Address Carhart Hardware Co., Emerson, Nebraska. 1-3t

Wanted—Foundrymen, tanners and plumbers to invest small amounts in the Akers National Stove and Specialty Company, soon to build a big new plant in Kansas City. Responsible jobs in the factory are to be given first to stockholders. Address Mr. Tracy, 710 K. C. Life Building, Kansas City, Missouri. 1-3t

SITUATION WANTED

Situation Wanted—As manager or clerk in a hardware store. Am an A-1 furnace man. Can also do bookkeeping. Best of references will be furnished. Address B-2, care of AMERICAN ARTISAN AND HARDWARE RECORD, 620 South Michigan Avenue, Chicago, Illinois. 26-3t

Situation Wanted—By a first-class tinner. Have had 17 years' experience in selling and installing furnaces; also three years' experience in blow pipe work. Am 39 years old and married. Michigan preferred. Only steady job considered. Address B-1, care of AMERICAN ARTISAN AND HARDWARE RECORD, 620 South Michigan Avenue, Chicago, Illinois. 26-3t

Situation Wanted—Good mechanic, 15 years' experience, desires change of location. Can take charge of shop. Experienced in skylight, cornice, ventilating, furnace and all job work. Work from blue print and develop patterns. Desire a place where I can buy a home and move family. Good reasons for changing and best of references can be furnished. Address O. E. Ebert, Box 72, Sioux City, Iowa. 1-3t

TINNERS' TOOLS

For Sale—A number of tanners' tools and machines. Write for list and prices. Box 123, Clarion, Iowa. 2-3t

For Sale—Quantity of tanners' tools at a bargain. Write for a list. Address Beuret Heating Company, Auburn, Indiana. 2-3t

Wanted to Buy—A second hand elbow edging machine or a small turning machine with a set of wheels. Must be in good order. Address Chas. R. Owens, 465 Locust Street, Akron, Ohio. 2-3t

For Sale—One large Niagara burring machine, good as new; one Peck Stow setting down machine, first class condition. \$34.00 for both. Address G. O. Crouch, 25 Market Square, Chattanooga, Tennessee. 2-3t

Wanted—To Buy—A second hand small burring machine with rotary standing. Must be in fairly good condition and at a low price. Also want small tinner's tools or machines. Address S. B. Egbert, 812 May Street, Hood River, Oregon. 1-3t

For Sale—A complete set of tinner's tools. Most of them are in fine shape. Some are new. Send for list and prices on same. Prefer to sell all together, but will sell by piece if necessary. Good price if taken at once. Address Rickle's Hardware, Monticello, Iowa. 2-3t